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Pages 9-16

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Farmers Spend More, Profit More

Georgia Program Prompts Efficient Fertilizer Use

By RALPH L. WEHUNT*
Extension Agronomist
University of Georgia

An Intensified Soil Fertility Program was initiated by the Georgia Agricultural Extension Service last year on a "pilot" basis. The program was conducted, under the leadership of county agents and their assistants, in the six southcentral Georgia counties—Colquitt, Coffee, Tift, Thomas, Worth and Laurens.

One objective of the program was to focus attention on the use of the right kind and amount of fertilizer and lime for profitable crop production. This report will show that the program had a marked influence on more efficient fertilizer usage in the six counties. The information in this report should be useful in pointing up to agricultural workers and to fertilizer industry leaders the value of an educational program on soil fertility.

Fertilizer consumption data are those reported by the Georgia Department of Agriculture for the period Jan. 1 to Dec. 31, 1957, and the period Jan. 1 to Dec. 31, 1958.

In evaluating these data, it should be kept in mind that a fairly large crop acreage in the six counties was placed in the soil bank. In fact, about 50,072 acres of cotton, tobacco, wheat and corn were taken out of cultivation in 1958. Approximately 33%—or 32,824 acres—of cotton was put in the soil bank program.

Here are some statistical highlights which show the impact of the Intensified Soil Fertility Program on fertilizer consumption in the six counties:

Farmers used more fertilizer. Total consumption of all mixed fertilizers and materials increased in the six counties from 160,993 tons in 1957 to 177,206 tons in 1958. This was an increase of 16,213 tons—or 10.1%. However, because more higher analysis fertilizers were used, consumption of actual plant nutrients increased 17.5%. It is estimated that farmers in the six counties purchased $1,238,000 more fertilizer in 1958 than in 1957.

All of the three major plant nutri-

(Turn to GEORGIA PROGRAM, page 8)

*An address prepared for the meeting of the Georgia Plant Food Educational Society, Athens, Ga., Jan. 13.

USDA Sees Reduced Grasshopper Threat

But Survey Shows Wider Infestations

WASHINGTON—Grasshoppers are likely to be more widespread, but less of a threat to western crop and rangelands in 1959, the U.S. Department of Agriculture has announced in releasing figures showing the results of federal-state surveys made last fall.

Grasshoppers were found on 22,666,922 rangeland acres in 15 western and midwestern states, as compared with 18,686,492 acres in 1957. However, where the 1957 fall survey showed many areas of heavy infestation, last fall's survey showed most of the acreage to carry only light or moderate infestations.

These surveys are made to give advance warning to farmers and ranchers. They also provide information to pest control officials of the USDA's Agricultural Research Service and state agricultural agencies that carry out cooperative control activities on

(Turn to GRASSHOPPERS, page 17)

AAC Purchases Deep-Root Firm In Olathe, Kansas

NEW YORK—Negotiations were completed Jan. 15 for the purchase of Deep-Root Fertilizers, Inc., Olathe, Kansas, by the American Agricultural Chemical Co. The announcement was made in New York by C. M. Powell, president of the AAC company.

The plant, which will offer Agrico fertilizers to the eastern Kansas-western Missouri area, is the first Agrico plant west of the Missouri River; other plants in the area are located at Humboldt, Iowa; Fulton, Ill.; Danville, and East St. Louis, Ill. There are 37 Agrico manufacturing plants in all.

Fertilizer Firm Files Incorporation Charter

DOVER, DEL.—General Fertilizer Corp. has filed a charter of incorporation with the corporation department of the secretary of state's office here. Authorized capital stock of the firm is $10,000. Corporation Trust Co., 100 W. 10th St., Wilmington, is serving as the principal office.

NORTH CAROLINA MEETING HEARS:

Pesticide Industry Must Keep In Step with Farmer Problems

RALEIGH, N.C.—"We must keep in step with the farmers in helping them solve their problems and supply their needs," Dr. D. E. Wolf, the Du Pont Co., Atlanta, told the more than 175 persons attending the Pesticide School Jan. 14-15 at North Carolina State College here.

Speaking on the acceptance of agricultural practices, Dr. Wolf, the keynote speaker, pointed out that growers accept new ideas because they fit their need, want or desire.

"The chief demand today," he said, "is to decrease the production cost of the farmer and to provide new practices to make production more reliable."

He pointed to the needs of the future with its rapidly increasing population. "Pesticides," he said, "will enable the farmer to harvest more of what he grows."

The school opened formally with a welcoming address by Dr. H. B. James, director of instruction for the college's School of Agriculture. Dr.

(Turn to N. C. MEETING, page 4)

Weed Control Economics Covered in Discussions At Northeast Conference

NEW YORK—The economics of weed control as well as technical discussions on properties and application of herbicides featured the three-day Northeastern Weed Control Conference at the New Yorker Hotel here Jan. 7-9. Registering for the event were largely representatives of the trade, colleges and universities in the Northeast and of states and cities where herbicides play an important part in control of unwanted vegetation.

A report on weed control experiences in Vermont was presented by T. R. Flanagan, University of Vermont agronomist. He outlined the expansion of weed spraying equipment in the state, saying that the number of low-pressure, low-volume sprayers increased from 30 in 1952 to some 212 in 1958. In addition, he said, a half dozen airplanes and helicopters are also being used. Beyond this, some farmers owning spray equipment did some custom work.

Despite the steady increase in numbers of sprayers, the use of each sprayer did not diminish. In 1953, about 39 acres were sprayed by each operator; in 1958 the state average increased to 58 acres of weed and insect control per spray rig.

To provide impetus to Vermont's spray program, he reported, considerable use has been made of farmer meetings and of the newspaper, radio and television. Various pamphlets, a periodic weed spray bulletin to county agents—"Spray Tips," and annual weed control recommendation charts have been distributed widely.

Local herbicide dealers have also contributed to the increasing success of weed and insect control in Vermont, Mr. Flanagan said.

How chemical brush control solves problems on public watersheds and supply lines was described by Archie W. Paine, general superintendent of the Metropolitan District Water Bureau of Hartford, Conn. He told the conference that the cost of chemical spraying for weed control was less than two-thirds the former cost of doing the same work manually.

In 1954, a 10-man crew worked from early spring to late fall keeping brush under control around the edge

(Turn to WEED CONTROL, page 20)

Inside You'll Find

Davison Adds Granulation Facilities At Florida Plant

FT. PIERCE, FLA.—Construction of a $500,000 addition to its fertilizer plant here has been started by W. R. Grace & Co. Davison Chemical Division.

The new equipment will manufacture granulated fertilizers and will be the first source of such products in the Ft. Pierce area, the company said. The existing equipment turns out conventional ground fertilizers under the Naco trade name, and is operating at capacity.

The present plant dates from 1953, when it was built to replace an installation which had been completely destroyed by fire.

Davison initiated its continuous process for granulation in 1953, and this is now operating in Davison plants at Baltimore; Alliance, Findlay and Columbus, Ohio; Lansing, Mich.; New Albany, Ind.; Joplin, Mo.; Perry, Iowa, and Tulsa, Okla.

Texas Conference Speakers Say State Could Use More Fertilizer

COLLEGE STATION, TEXAS — Speakers at the annual Texas Fertilizer Conference held at Texas A&M College, Jan. 6-7, emphasized that the state's agricultural producers could profitably up their use of fertilizers several times above present usage.

Dr. A. G. Caldwell of A&M's Department of Agronomy said more than twice the amount of fertilizer presently used in the entire state could be utilized in the eastern part of Texas on pastures. A panel of agronomists and horticulturists said that if corn, grain sorghums, cotton, wheat, rice and horticultural crops received the recommended applications of plant foods that more than five times as much fertilizer would be required as is presently being used in the state.

E. M. Trew, extension pasture specialist, emphasized that proper conditioning of the soil, adequate moisture and selecting the correct species were vitally important to the successful establishment of pastures in east Texas. F. L. Fisher of the Texas Agricultural Experiment Station used colored slides to show the 150 in attendance that year-round pastures in east Texas were not only possible but highly profitable. He said the liberal use of fertilizers on small grains for forage, on common and Coastal Bermuda grass pastures and on irrigated Coastal pastures gave very large increases in yield.

Dr. Caldwell pointed out that the increase in pasture production for the east Texas area could be jumped from 1¼ tons an acre where fertilizer was not used to 2½ tons where 60-30-30 fertilizer was applied. Under irrigation the yield would be increased from near 3 tons of hay or dry forage an acre to about 8 tons when 400 lb. of nitrogen and at least 60 lb. of phosphorus and potash an acre was applied to pastures that contained mostly common Bermuda.

E. K. Chandler of the National Plant Food Institute told the group that producers in northwest Louisiana—an area similar to east Texas—had never had a failure with Coastal Bermudagrass in this sandy area and had been able to produce 8 tons of hay an acre by using 400 lb. of nitrogen and adequate amounts of phosphate and potash.

Research at A&M has indicated, said Dr. E. C. Holt, a marked need for fertilizer and fertilizer management on turf grasses for lawns, parks and recreational areas.

W. H. Dupree of the Tennessee Colony community in Anderson County and Mr. Trew told how the community pasture program sponsored by the Texas Plant Food Educational Society had helped the community. He highlighted his remarks with a story of 87 Coastal Bermuda sprigs that were planted in the spring of 1956 by two brothers to start their acre nurseries. By fall of that year, each had harvested 90 bales of hay.

A Beaumont banker, Chas. Schmucker, told the group that fertilizer use was considered the mark of an efficient farmer. The Texas Highway Department, said D. L. Campbell of the Red Star Fertilizer Co., is becoming increasingly interested in turf fertilization for establishing sod along new highways and for protecting grades along existing roads.

In a session on Jan. 6 George Kelt was elected president of the Texas Plant Food Educational Society; M. D. Seay, vice president and Sherman Clark was reelected secretary.

W. F. Bennett, extension soil chemist, explained how soil testing could benefit both the producer and dealer. Dr. W. O. Trogdon, head, agronomy department, urged the fertilizer industry to encourage their dealers to sell on the basis of need rather than on the basis of what is in their warehouse.

Boyd S. Proctor, a junior from DeKalb, Texas, in the Department of Agronomy at A&M, received the 1958 Agronomy Achievement Award. The award is presented by NPFI and consists of a cash award of $200 and an engraved gold key to the winning individual. In addition, the name of each annual winner is inscribed on the Texas A&M College Agronomy Achievement Award plaque, which remains in the department of agronomy. Dr. Robert L. Beacher, director of the southwestern region office of the NPFI, presented the award at the annual banquet.

Seed Treatment Cited As Soybean Booster By Minnesota Pathologist

ST. PAUL, MINN.—Farmers can usually increase their soybean yields by 2 or more bushels an acre by treating the seed before planting to prevent root rot—the worst disease of soybeans in the state.

Thomas D. Wyllie, University of Minnesota plant pathologist, made that statement during a Farm and Home Week session on the St. Paul campus.

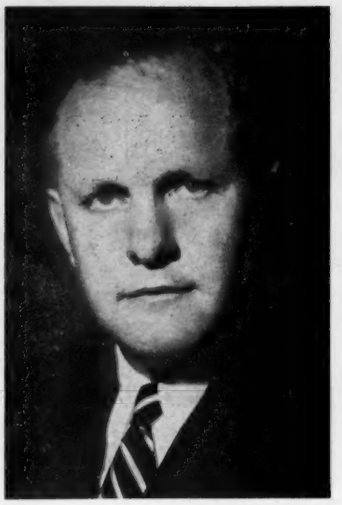
He said that during the past three years, more than 60% of soybean samples tested from around the state showed an increase of as much as 7 to 8 bu. an acre from treating.

Last summer, he found that some non-treated seed showed a 50% loss in stand, compared to treated seed from the same samples. "This loss," he said, "represents an 8 bu.-per-acre reduction in yield and approximately a $16 loss in return."

He added, however, that "seed treatment probably will not give such large increases in yield every year, but increases of about 2 bu. an acre are quite common."

Mr. Wyllie also said that treatment usually results in greater increases in stand, and possibly in yield, in low quality seed than in high quality seed.

Seed treating costs about 30¢ an acre, according to Mr. Wyllie. So if you get a yield increase of 2 bu. from the treatment, the return is about 10 times the treating cost. Besides, the increase may be much higher in some cases.



Richard C. Wells

EXECUTIVE VICE PRESIDENT—Richard C. Wells has been elected an executive vice president of Freeport Sulphur Co., New York, by the board of directors, announced Charles A. Wight, president. Mr. Wells will continue as president of National Potash Co., a jointly owned subsidiary, which he has headed since its organization in 1955. He is a graduate of Harvard College and the Harvard Graduate School of Business Administration. He joined Freeport in 1939 and was elected controller in 1947 and vice president in 1950. The board also elected three other officers of the company. They are: William B. Porterfield, Jr., assistant vice president, formerly vice president and sales manager of National Potash; Palmer H. Evanson, assistant controller, and Robert M. McArthur, Jr., assistant controller.

WHOA . . . SAGEBRUSH—

RICHFIELD, UTAH—A 99% sagebrush kill has been achieved through aerial spraying of herbicides in central Utah's Fishlake National Forest, S. L. Cuskelly, forest supervisor, reported.

Furthermore, native grasses in the area have shown phenomenal growth in vigor and productivity, Mr. Cuskelly said. Bitterbrush, a palatable feed for both livestock and big game, also has shown a surprising comeback.

The treated area was sprayed in June of 1957. Treated was the mountain range above the small community of Glenwood. The range is part of Fishlake National Forest.

Mr. Cuskelly says the new vegetative cover will reduce flood hazards by stabilizing the soil and allowing it to become permeable to water.

NPFI Awards Tennessee Extension Service $2,000 Fertilizer Research Grant

WASHINGTON—A grant of $2,000 has been awarded to the Tennessee Agricultural Extension Service by the National Plant Food Institute to support a series of fertilizer demonstrations during 1959 in one county in each of the five extension districts in the state, announced S. L. Tisdale, southeastern regional director of NPFI.

The purpose of this undertaking is to demonstrate that increased crop production and higher net farm income result from sound fertilization and good management practices. The amounts and ratios of fertilizer to be used for each field will be determined after a chemical analysis of the soil has been made.

The demonstrations will be carried out on fields of outstanding farmers in each area and will be identified by signs indicating the practices being demonstrated. The economic advantage to the farmer of following the practices being demonstrated will also be shown on the signs wherever possible and publicity stressing the importance of sound fertilization on the basis of soil test results will be given the project through newspapers and radio.

An intensified soil testing program will be initiated during the fall of 1959 by the extension service and county agents.

The entire program will be carried out under the direction of Dr. W. D. Bishop, extension agronomist of the Tennessee Agricultural Extension Service.

W. M. Bryan

S. Winfield Hill

SALES PERSONNEL—W. M. Bryan and S. Winfield Hill were named sales representatives for Bradley & Baker, it has been announced. Both are assigned to the firm's staff at Norfolk, Va. Formerly with Virginia-Carolina Chemical Corp., Mr. Bryan will service the southern half of the state. He is a graduate of Campbell College. Mr. Hill, an alumnus of Virginia Polytechnic Institute, will call on Bradley & Baker customers in Virginia and part of northern North Carolina. He was formerly with the Chilean Nitrate Sales Corp.

CROPS SPECIALIST

NEW BRUNSWICK, N.J. — Dr. Henry W. Indyk of Newark, Del., will become associate extension specialist in farm crops at the College of Agriculture, Rutgers University, Feb. 1. His appointment to the extension service staff is announced by James B. Fawcett, associate director. Dr. Indyk received a bachelor of science degree from Rutgers in 1950 and M.S. and Ph.D. degrees from Pennsylvania State University in 1952 and 1953. He is now assistant professor in agronomy at the University of Delaware.

Dow Chemical Announces Two Sales Appointments

MIDLAND, MICH. — Chester E. Otis has been appointed to the newly created post of sales manager, agricultural products, for Dow Chemical International Ltd. S.A., subsidiary of the Dow Chemical Co.

Mr. Otis will be responsible for planning and directing agricultural products sales and the development of marketing policies for these products. For the past year Mr. Otis served as assistant manager and a section head for Dow's agricultural chemical development organization.

Succeeding Mr. Otis as ACD section head in charge of herbicides and fertilizer materials will be L. L. Coulter. Mr. Coulter, who moves up from project leader, has been working recently on vegetation control for rights-of-way and industrial areas.

Mr. Otis joined Dow in 1946 as an agricultural chemicals salesman with the Seattle office. In 1950 he was appointed supervisor of agricultural chemical development on the West Coast. He transferred to Midland in 1953 as supervisor of field development in the U.S.

Mr. Coulter also came to Dow in 1946 and for two years was located in East Lansing, Mich., handling vegetation control field work in cooperation with Michigan State University groups. From 1948 to 1953 he was a specialist in herbicides with the Dow field agricultural research staff in South Haven, Mich. He moved to Midland in 1953 as a project leader.

MANAGER RESIGNS

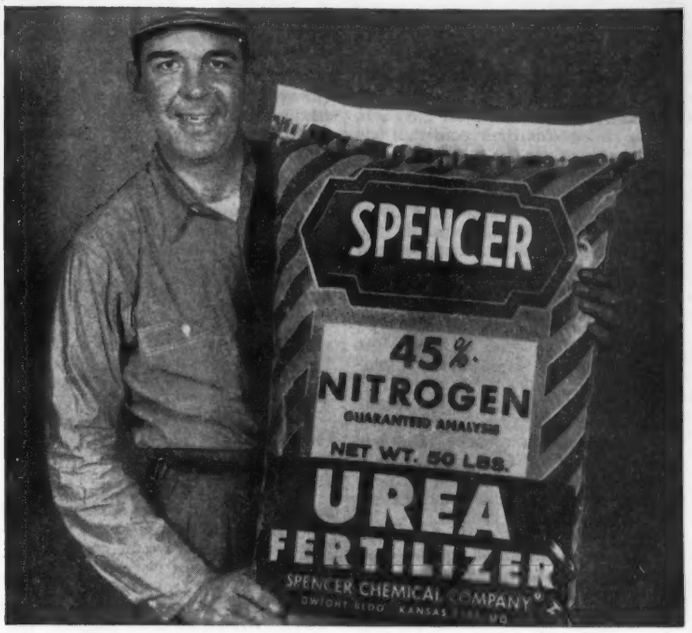
SACRAMENTO—Robert R. Mauser has resigned as general manager of Caladino Farm Seeds, Inc., a seed cooperative with headquarters at Artois, Cal. Mr. Mauser informed the board of directors he has accepted a position as executive vice president of California Canners and Growers. Mr. Mauser joined Caladino in 1952. Walter Reed of Bayliss, Cal., is its president.

Stuart A. Campbell Joins Grace Chemical Division

MEMPHIS, TENN. — Stuart A. Campbell has joined W. R. Grace & Co., Grace Chemical Division, here as a sales representative.

Mr. Campbell will sell all Grace products, working out of Grace's Chicago office and will cover Illinois, Iowa, Indiana, Ohio, Michigan, Wisconsin, Minnesota, Nebraska and North and South Dakota.

Mr. Campbell attended the University of Buffalo and Pace College, New York City.



Available in the all-plastic, weather-proof 50-lb. bag that your customers can re-use, or the time-tested polyethylene-lined 80-lb. bag, Spencer 45% Urea offers big, new selling advantages.

New!

Spencer 45% Urea!

Contains more nitrogen per pound of material than any other solid nitrogen source:

...and Spencer 45% Urea is available in the new weather-proof plastic bag!

LIKE to go after bigger and better profits this year? Then stock up on new Spencer 45% Urea—the nitrogen source that gives you all these selling advantages:

High analysis nitrogen! Because Spencer 45% Urea contains more actual pounds of nitrogen per pound of material than any other solid nitrogen source, your customers don't have to handle as many bags per field.

> **Farmers can cover more than twice as many acres with one spreader load of Spencer 45% Urea as they can with an identical load of ammonium sulfate!**

That means fewer stops to refill the spreader, more acreage covered in a lot less time. But that's not all!

Easy to apply! Spencer Urea is "perfection prilled" for trouble-free uniform spreading. It can be put down with an end-gate seeder or broadcast spreader, flown on with an airplane, plowed down or side-dressed, even dissolved and applied as a foliar spray or in irrigation water!

You can be sure your customers will get full value, too, when they invest in Spencer Urea — it's *guaranteed* to contain 45% actual nitrogen. What's more, farmers can expect a return of $3.00 for every $1.00 they put into Spencer Urea!

Less leaching! In soils where leaching is a problem, Spencer 45% Urea offers special advantages. That's because Spencer Urea contains only "soil clinging" ammonia nitrogen. And by applying Spencer 45% Urea in the fall or early spring, efficiency is increased and chances of nitrogen loss are reduced to a minimum!

So cash in on this opportunity to offer your customers a new product, manufactured by a company they have learned to trust, accept and respect—Spencer Chemical Company.

Place your order now through your manufacturer's representative for new Spencer 45% Urea!

Unload fertilizer in the rain? Sure, if it's Spencer 45% Urea in the weather-proof bag! Stays dry, even in driving rain. Stores right in the field for several weeks! Empty bags can be used for storing seed, small tools, etc. Heat-sealed together, they make a tarp! Spencer Chemical Co., Dwight Bldg., Kansas City 5, Mo.

N. C. MEETING

(Continued from page 1)

James commended the more than 400 teaching and research staff members at the college for their contributions to agriculture.

"Agriculture," he stated, "is no longer just the farmer. It now has a new concept including three vital groups of people—the farmers, the industries which provide supplies and services to the farmer, and those who store, package and market farm products."

The remainder of the opening day's program was devoted to the latest findings in the fields of plant pathology and weed control.

Dr. C. J. Nusbaum of the plant pathology department discussed nematode control in tobacco. He advised rotation of crop, particularly with fescue. He also advised farmers to plow out roots rather than letting them remain in the ground.

Dr. C. B. McCants of the same department covered the influence of soil fumigation on the response of tobacco to forms of nitrogen.

Dr. McCant's report was based on studies during the three-year period 1956-1958 as to the influence of soil fumigation on the response of tobacco to ammonium and nitrate forms of nitrogen. The fumigants used were methyl bromide, Shell DD, Dowfume W-85 and Dorlone.

Dr. McCants stated, "Each of the fumigation materials has been shown to reduce nitrification under both laboratory and field conditions. On fumigated soil, the yield and quality index of tobacco generally increased with increasing percentage of the total nitrogen applied in the nitrate form.

"As a result of information obtained from these studies, the Agricultural Experiment Station now recommends that 'on soils that have been fumigated to control nematodes, the fertilizer should contain at least 25% of the nitrogen in the nitrate form'."

Southern stem and root rot control was discussed by J. C. Wells, extension plant pathologist.

"Southern stem rot," he said, "is one of the limiting factors in peanut production in North Carolina, and the disease causes an average annual loss amounting to approximately $2½ million.

"Results of research and demonstration work have shown that deep plowing in land preparation to bury old plant refuse to prevent pathogen build up, flat cultivation to avoid burying green leaves so that they become more susceptible, leaf spot control to prevent accumulation of leaves around the base of the plant where the pathogen grows on them, and rotation with cotton, corn, grain sorghum and small grain will help to reduce losses from the southern stem rot disease. Losses have also been reduced by using the new soil fungicide, Terraclor."

Drawing his conclusions from research data, Mr. Wells stated that this disease can be partially controlled economically through the use of certain cultural practices combined with the application of the new soil fungicide, Terraclor. "It is also evident," he said, "that either the Terraclor-landplaster combination or the dust formulations give adequate control."

Dr. J. N. Sasser presented a paper which he, Dr. W. E. Cooper, and Mr. Wells had compiled on sting nematode in North Carolina.

According to the compiled data, one of the most devastating nematode parasites in North Carolina is the sting nematode (Belonolaimus gracilis).

"Control of this pest in the peanut area by rotation is difficult since most of the crops normally used in a peanut rotation are susceptible," Dr. Sasser said. "Soil fumigation, however, appears to be practical and economical.

"In tests conducted in 1958 in a heavily infested field, Nemagon in preplant treatments used at the rate of 1.5 gal/A increased yields of peanuts and soybeans approximately 500 and 600%, respectively. Acre value of peanuts was increased from $43.94 for untreated plots to $404.16 for plots treated at the 1.5 gal/A rate. Corn yields were increased 200% with 1.0 gal/A of Nemagon. Early side dress applications gave similar, though less pronounced, yield increases for peanuts and soybeans, but were ineffective on corn."

Discussing results with vegetable fungicides, Dr. N. N. Winstead reported on several fungicides tested during 1958.

In tests in both eastern and western parts of the state, sprays were more effective in controlling the diseases than were dusts. In a test for the control of Anthracnose or ripe rot of red sweet peppers, sprays were also more effective in disease control than were dusts.

Maneb was added to the list of fungicides recommended for the control of Downy Mildew on cucumbers and for the control of late blight in tomatoes.

Discussions during the second day of the program were directed by the college's entomology department.

Dr. Clyde F. Smith, head of the department, opened the session summing up trends in entomological research.

"We are looking for the answer as to why insects die, and of equal importance, why do we have insects and from whence do they come," he said.

"Another phase of work is the effect of insect pathogens on insects and the ultimate control of the pest species. This is a relatively new field, but one which undoubtedly will be of importance."

According to Dr. Smith, the use of insect pathogens and resistant plants should enhance the control obtained with chemicals, which in the long run will be of benefit both to the insecticide manufacturer and the farmer.

Concluding, he stated, "We are all interested in one thing; namely, the best possible control of our insect pests. This can be obtained only through a thorough knowledge of all the factors governing the abundance of the pests and an understanding of how and why the chemicals kill the pests. This can be obtained best and quickest through an integrated program of all interested people; namely, your state and federal agencies, the insecticide manufacturers and dealers, and the farmers. One of the important aims of this school is to bring about a closer liaison among these agencies."

Grain protectants in wheat were covered by Prof. W. V. Campbell. According to his findings, malathion is effective in protecting stored wheat from insect attack for many months.

Mr. Campbell concluded, "If the recommended rates of application are followed, there should be no harmful insecticide residues. Malathion as a grain protectant is economical, safe to apply, has good residual properties and is effective in any type of grain storage facility."

Dr. R. T. Gast summarized the latest information on house fly resistance.

Dr. Charles H. Brett highlighted research on vegetable insects.

Summarizing his report, Dr. Brett stated that insecticide tests on the Mexican bean beetle show some new dust materials to be very effective—namely, 1½% Sevin, 3% Rogor, 2% Trithion, and 4% Diazinon. Sevin has been included in the 1959 recommendations.

Tests on cabbage loopers showed 20% toxaphene dust continued to be consistently effective. Good control of the harlequin bug on collards was obtained with 1½% Sevin, 2% Trithion, 4% malathion, 3% Diazinon, 3% Rogor and 4% Thiodan.

Prof. George D. Jones concluded the program by highlighting major changes in the 1959 recommendations. His main point was that systemic insecticide offered the best control of cattle grubs.

The complete picture of the 1959 pesticide recommendations is contained in the Pesticide Manual, published annually by the North Carolina College Extension Division.

Within the 150 page booklet is the latest information on the use of fungicides, insecticides, herbicides and rodenticides for the benefit of dealers, formulators, manufacturers, county agents, farm superintendents, vocational agricultural teachers and other agricultural leaders.

Extra copies of this manual will be available as long as the supply lasts. Single copies are $1 each and four or more copies may be obtained for 75¢ each. Send orders to the Division of College Extension, Box 5125, State College Station, Raleigh, N.C.

NEW RETAIL STORES

MERCED, CAL.—Stribling's Nurseries, Inc., has been incorporated in Merced as retail stores selling chemicals and other garden products, as well as farm materials. Officers of the firm are T. B. Stribling, Jr., Willis A. Stribling and Bert Lee Stribling III, all of Merced.

NORTH CAROLINA HUDDLE—Chatting informally above are Dr. R. P. Upchurch who handles research on field crops and was general chairman of the North Carolina Pesticide program, left, Dr. D. E. Wolf of Atlanta, Ga., the Du Pont Co., and keynote speaker, center, and Dr. D. E. Ellis, head of the college's plant pathology department and chairman for the opening session of the two-day school.

Robert W. Schramm

Robert W. Schramm Joins Southern Nitrogen

SAVANNAH, GA.—Robert W. Schramm has joined Southern Nitrogen Co., Inc. in a new position of general manager of development, it was announced by John R. Riley, Jr., president. Mr. Schramm's work in his new post will be concerned with long-term corporate planning and the evaluation of new business opportunities. He will be stationed in the New York City offices of Southern Nitrogen Co., Inc. and will report to George V. Taylor, vice president of sales.

Mr. Schramm was graduated from the University of Notre Dame with the degree B.S.Ch.E. in 1944. In the same year he joined Carbide and Carbon Chemicals, a division of Union Carbide, in Whiting, Ind. In 1948 he began graduate work at Indiana University, where he received the degree of M.B.A. in 1949. He did additional graduate work at the University of Kansas, Rockhurst College, Case Institute, Kansas City University and New York University.

Before Mr. Schramm's present move he was associated with the Union Carbide Development Co. Prior to that he was coordinator of long-range planning for Spencer Chemical Co., Kansas City.

Heyden Newport Purchases Strobane

NEW YORK—Strobane, a terpene-based insecticide, has been purchased by Heyden Newport Chemical Corp. from the B. F. Goodrich Chemical Co. Heyden Newport will have all rights to manufacture and sell Strobane. Strobane is currently on the market in liquid and aerosol formulations for home use. "Its promising performance, combined with our basic position in terpene chemicals, points to an important role for Strobane in our expanding agricultural chemical program," said S. Askin, president of Heyden Newport.

Full commercialization for large-volume pesticide applications is planned, he said, upon successful completion of field studies to be made in 1959 in cooperation with federal, state and local agricultural agencies.

Monsanto Completes Acid Unit Expansion

ST. LOUIS — Monsanto Chemical Co. has completed expansion of its chlorosulfonic acid facilities at the William G. Krummrich Plant, Monsanto, Ill., John M. Depp, Jr., director of manufacturing for the company's Inorganic Chemicals Division, has announced.

Principal users of chlorosulfonic acid are the detergent, pharmaceutical and agricultural chemical industries.

Harold H. Shepard Authors New Volume

A new pesticide manual, "Methods of Testing Chemicals on Insects, Vol. 1" has just been announced by Dr. Harold H. Shepard, chief agricultural chemicals staff, Commodity Stabilization Service, U.S. Department of Agriculture, Washington, D.C. The manual, issued by Burgess Publishing Co., Minneapolis, is the first volume of a proposed three-volume study. He describes methods of studying the effects of chemicals on the physiology of insects. Also treated are general techniques for applying chemicals to insects. They include laboratory screening methods for determining the killing efficiency of insecticidal sprays, dusts and fumigants.

The manual is cloth bound, measuring 8½" x 5½" and contains 355 pages.

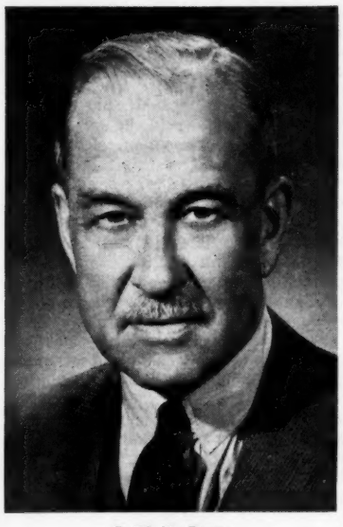
The contents of the book include chapters on surface phenomena in relation to insect cuticle; penetration of insect cuticle; measurement of insect respiration; resistance studies, precision spraying and dusting, testing fumigants, and synergism and antagonism.

Volume II is nearing completion, according to Dr. Shepard. It will deal with areas such as the screening of household and soil insecticides, and the testing and evaluation of miticides, systemic chemicals for livestock insect control and mothproofers.

Each volume is priced at $5.

Extend Sales Contract

ATLANTA, GA.—Duval Sulphur & Potash Co. and Ashcraft-Wilkinson Co., Atlanta, report that they have extended the contract under which Ashcraft-Wilkinson represents Duval as its exclusive sales agent for potash and domestic sulphur. This agency agreement started when Duval entered the sulphur industry some 30 years ago and has continued uninterrupted. In 1950, the agreement was expanded to include Duval's production of muriate of potash.



J. H. D. Ross

NEW PRESIDENT—J. H. D. Ross has been elected president of Chipman Chemicals, Ltd., Hamilton, Ont., according to an announcement following a recent meeting of the board of directors. Mr. Ross succeeds W. H. Moyer who has been named chairman of the board of the company. Mr. Ross has been general manager from the time Chipman Chemicals, Ltd., was reorganized in 1956 to merge its operations with the pesticides operations of Canadian Industries, Ltd. As president, he will continue to be responsible for the general management of the company's affairs. First president of the new organization was J. D. Ruttan of Winnipeg who later retired under the company's pension plan but has remained a director.

Group Gives High Priority to Better Insect Controls

WASHINGTON—Research to improve control of insect and nematode pests of fruits is a high priority need, according to members of the U.S. Department of Agriculture's deciduous fruit and tree nut research and marketing advisory committee who held their annual meeting here recently.

Studies are needed to screen insecticides that have a broad range of effectiveness, are less hazardous to handle than some now being used and can be used up to harvest times without leaving residues, the committee said. Better lures and traps are also needed, and better methods of biological insect control should be developed.

Nematode research should be concentrated on finding chemical methods of combating nematodes attacking stone fruits, walnuts, grapes and other small fruits, as well as on biological controls as the ultimate solution of the nematode problem, the committee said.

California Farm Store Sales Jump 8.7%

SAN FRANCISCO—Sales by farm and garden supply stores in California increased a substantial 8.7% between the third quarter of 1957 and the corresponding three months of the year recently ended.

The California State Board of Equalization reported estimated total sales during the period of $28,407,000 as compared with $26,125,000 during the preceding summer months.

Sales through farm implement dealers stores rose by just under 1% during the same period, from $42,130,000 to $42,510,000.

Oregon Fertilizer Plant Nears Construction Finish

HALSEY, ORE.—A bulk fertilizer plant, currently under construction, neared completion as roofing procedures were underway.

The Oregon-Washington Fertilizer Co., Seattle, is doing the construction. Cross Brothers of Halsey will operate the plant.

Plans call for the facility to be in operation sometime this spring.

Sulfur Production

WASHINGTON—The domestic sulfur industry produced 360,378 long tons of native sulfur and 52,916 tons of recovered sulfur (of a purity of 97% or greater) during November, according to reports of producers to the Bureau of Mines, U.S. Department of the Interior. Producers' stocks of native sulfur decreased slightly from the previous month, and at the end of November totaled 4,462,475 tons.

Weed Controls from All Angles Discussed at California Meeting

SANTA BARBARA, CAL.—The importance of the role farmers play in the formation and development of county roadside weed control programs was stressed by Marvin J. Switzenberg, San Joaquin County deputy agricultural commissioner, Stockton, in his report to the California Weed Conference in its eleventh annual meeting here. Mr. Switzenberg is in charge of weed control in San Joaquin County.

Mr. Switzenberg said that the present large scale roadside weed control project in his district was originally formed as a result of a request submitted by a group of weed conscious farmers to the San Joaquin County board of supervisors.

Mr. Switzenberg declared that since his department was charged with the responsibility of roadside weed control a decade ago, vast strides have been made in combating many noxious weeds that menace agricultural lands in San Joaquin County.

In reviewing the current local road maintenance situation, the San Joaquin County official reported that roadsides in the county are sprayed up to eight times a year for weed control. Of his department's 21 weed control rigs, 16 are used almost exclusively for roadside spraying.

How weeds increase the operating costs of public utilities such as a telephone company was discussed by Ralph B. Stellrecht, senior engineer (outside plant practices department), Pacific Telephone and Telegraph Co., San Francisco.

Mr. Stellrecht declared that weeds and brush add to telephone company costs without providing any benefit.

He said that his company's weed problem started when they cleared their first right-of-way and it has been with them ever since. He reported that the early methods of controlling weeds and brush by using the hoe, brush hook, and axe have been replaced by better and more economical chemical weed and brush killers.

In reviewing the company's weed control program, Mr. Stellrecht listed three reasons for controlling unwanted vegetation: (1) thick brush on rights-of-way obstructs maintenance operations; (2) dry brush under lines and around poles creates a fire hazard. A fire that puts their wire or cable out of service not only causes a loss in dollars and cents, but also results in an unmeasurable loss in service to the telephoning public; and (3) weeds around buildings and storage yards constitute another fire hazard.

E. A. Dudley, Orange County deputy agricultural commissioner, reported that governmental organizations confronted with weed control problems may obtain up-to-date information on weed control from local agricultural agencies.

Speaking on "Urban Weed Control," Mr. Dudley said weed control methods used 20 to 25 years ago, such as hoeing, burning, grading road shoulders and applying contact weed killers, have given way to the newer, better, and more economical methods of the march of science. He said there should be greater emphasis on adoption of up-to-date methods and procedures for they save city, county and state agencies hundreds of thousands of dollars a year.

Mr. Dudley, in reporting results of recent chemical weed control trials in Orange County, said one of the most vexing problems faced is untimely weed control. One objectionable practice is the burning of weeds on vacant lots. He said this practice in many places has been regulated to a great extent by law, but in districts where such regulations are not in effect, the burning of weeds is undesirable from the standpoint of air pollution.

Mr. Dudley said that his department in the near future hopes to find a partial solution for practical urban weed control.

"Crabgrass is a greater weed problem in turf than need be because most lawns are over-watered, underfertilized and mowed too closely," said Victor B. Younger, assistant horticulturist, University of California at Los Angeles.

Under these conditions chemical control is required, Mr. Younger said. Chemical control studies at UCLA from 1956 to 1958 showed that lead arsenate and calcium arsenate at 10 to 20 lb. per 100 sq. ft. of area applied in January and February are effective pre-emergence controls for crabgrass.

Mr. Younger reported that foliage-applied herbicides found to be effective in crabgrass control studies were di-sodium methyl arsenate and phenyl mercuric acetate in two to three applications about one week apart. Rates used should be those recommended by the manufacturer.

M. T. Palermo, entomologist, Eleventh Naval District, San Diego, reported on weed control in the district, which includes Southern California and Arizona.

Mr. Palermo said that weed control in the district is conducted in close cooperation with military representatives within the district. Consulted in the district's weed control planning were the following: soil conservationist, safety engineer, medical officer, fire protection engineer, and officials of the public works and maintenance departments. Chemical weed killers are carefully screened for their toxicity to animals, effectiveness for weed control, and cost from the job use standpoint.

Mr. Palermo said that some of the Navy's most important weed control problems involving its installations include: (1) sterilization of soil to control all vegetation under asphalt pavements, and the control of vegetation about tennis courts, in firebreaks and other areas with sterilants; (2) the suppression of vegetation under antennas and around signal lights; (3) the eliminating of noxious and poisonous weeds; and (4) selective weed control in turf.

Austin Armer, agricultural engineer, Spreckels Sugar Co., Woodland, Cal., declared that weed control is a problem shared alike by sugar beet growers and processors.

Mr. Armer reported that weed contamination of sugar beets increases hauling and processing costs in the same proportion as it increases primary crop production costs. He said that on the premise that total weed eradication is economically impossible, the sugar beet industry follows a policy of coexistence with weeds. "Many methods and machines have been developed which supplement standard cultural practices of weed control in the field and others cope with weed contamination of sugar beets within the sugar processing factories," he said.

Mr. Armer reported that there is now "a slow but sure transition from mechanical to chemical methods of weed control in the sugar beet fields. This transition is causing the row crop farmer to look to the research laboratories of the chemical industry and the state and federal agricultural agencies for the solution of his weed problems."

Commercial flower growers can recover as much as three dollars for every dollar they spend on chemical weed control, said Jack L. Bivins, Santa Barbara County farm advisor.

Big savings are possible in field grown ornamentals through chemical weed control, Mr. Bivins told the group at the final session of the three-day meeting on weed problems. He said that hand-weeding and machine cultivation can be used and are used to control weeds in all types of field grown ornamentals but these methods are expensive because of increased production costs.

"The grower pays an average of $75 to hand weed one acre of delphiniums for one year and $100 for one crop of stock. These same crops can be weeded chemically for as little as $24 and $65 an acre," Mr. Bivins told the conference.

Mr. Bivins disclosed that chemical weed control gives growers other benefits not so readily apparent but equally as important as the immediate savings of chemical control over hand-weeding. These benefits include increased yields and improved quality.

The Santa Barbara County farm advisor also noted there are fewer insects and less disease in plantings where chemical weed control is practiced.

D. C. Purnell, San Bernardino County farm advisor, said that hand weeding constitutes one of the major items in the cost of producing a crop of onions. He noted that growers of transplanted flat red onions in San Bernardino County have reported weed control costs as high as $125 per acre.

Mr. Purnell explained that severe weed competition early in the growth of onion plants has been shown to reduce yields. Heavy weed populations not only add to the cost of production, but will also reduce returns to the grower.

Tests conducted by the San Bernardino County Agricultural Extension Service in 1957 and 1958 indicate that by the use of selective herbicides, weed control costs in onions can be greatly reduced and yields materially increased.

Two chemicals for the control of annual weeds in container grown nursery stock, which eventually may save nurserymen thousands of dollars, were reported by Kenneth Britt, senior laboratory technician, department of floriculture and ornamental horticulture, University of California at Los Angeles. He explained that weed control in container grown nursery stock is a laborious task for growers and an expensive process.

In the past, weed control in containers has been accomplished mostly by hand weeding. Mr. Britt said that now hand weeding may be largely eliminated by the application of "pre-emergence herbicides". He explained that when these chemicals are applied to the soil surface they destroy emerging weed seedlings and, except for a few species, do not harm established ornamental plants in containers.

In reporting experiments at five Southern California nurseries with two recently developed pre-emergence herbicides, Mr. Britt said that rates equivalent to 2 and 4 lb. of the active material per acre resulted in weed control in container stock for periods of 3 to 5 months.

Mr. Britt prophesied that these new herbicides should be of great value to the nurserymen, since the per container cost of this method of weed control will be very small. One pound of the active material, at a rate equivalent to 4 lb. of the active material per acre, is sufficient to treat more than 50,000 one gallon size containers.

C. A. Shadbolt, assistant olericulturist, University of California, Riverside, said that two recently developed chemicals have effectively controlled weeds in celery without expensive hand labor. He reported that celery growers in southern California spend an estimated $50 to $80 per acre to control weeds by hand on about 7,000 acres of celery.

After testing a wide array of chemicals for weed control in celery, Dr. Shadbolt said that low rates of two materials not only showed effective weed control but under proper conditions could be used without injury to the crop.

One experimental product controlled 80 to 100% of the broadleaf weeds, such as nightshade, nettle and shepherds purse, when used at one-half to two pounds per acre. The plant scientist said that higher dosages under certain conditions caused stunting and reduction of crop yield.

OUTSTANDING STUDENT—Ronald L. Crismon, center above, a senior in agricultural chemistry and soils at the University of Arizona, was the first recipient of the agronomy achievement award to be made annually to the outstanding agronomy student at the University of Arizona by the National Plant Food Institute. The award, presented recently, includes a cash grant of $200. Standing on the left is Dr. Wallace Fuller, head of the department of agricultural chemistry and soils at the university, and holding the plaque is Dr. Darrel S. Metcalfe, director of resident instruction at the university. Dr. Richard B. Bahme, western regional director of NPFI (who does not appear in the picture), made the presentation to Mr. Crismon and his faculty advisors.

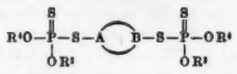
NEW COMPANY

FRESNO, CAL.—The Valley Natural Fertilizer Co. is a new firm just incorporated in Fresno, to process and sell fertilizer products in central California. William L. Wetzel heads the new firm, located at 5602 East Belmont Ave.

Industry Patents and Trademarks

2,865,946

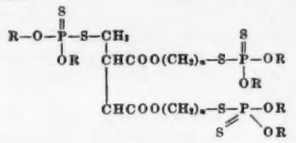
Pesticidal Phosphorus Esters. Patent issued Dec. 23, 1958, to Joe R. Willard and John F. Henahan, Middleport, N.Y., assignors to Food Machinery & Chemical Corp., New York. As a new composition of matter a compound of the formula



wherein R', R², R³ and R⁴ are lower alkyl radicals, and A and B form a ring structure selected from the group of five and six membered aliphatic hydrocarbon rings having at most one double bond.

2,865,802

Pesticides. Patent issued Dec. 23, 1958, to Abraham Bavley, Brooklyn, and Donald P. Cameron, Bronx, N.Y., assignors to Chas. Pfizer & Co., Inc., Brooklyn. A compound of the formula



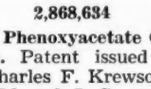
wherein *n* is one of the integers two and three and R is an alkyl group containing up to four carbon atoms.

2,867,519

Herbicidal Grease Composition. Patent issued Jan. 6, 1959, to Jeffrey H. Bartlett, Westfield, William H. Brugmann, Jr., Middlesex and Arnold J. Morway, Clark, N.J., assignors to Esso Research and Engineering Co. A herbicidal grease composition having an unworked penetration value of at least 27.5 mm. which comprises a mineral oil base normally having a viscosity of about 50 to 2,000 SSU at 100° F., said oil base being thickened by a herbicidal thickener finely dispersed therein to form said grease composition, said thickener comprising the combination of 0.5 to 10 wt. percent, based on the oil base, of a herbicidal salt of a halogenated aryloxy compound having an aliphatic acid substituent of 1 to 3 carbon atoms and about 3 to 50 wt. percent, based on the oil, of a soap selected from the group consisting of alkali and alkaline earth metal soaps of C_{12} to C_{20} fatty acids.

2,868,634

Terpene Phenoxyacetate Growth Regulators. Patent issued Jan. 13, 1959, to Charles F. Krewson, Abington, and Edward J. Saggese, Upper Darby, Pa., assignors to the United States of America as represented by the Secretary of Agriculture. The process of killing mesquite comprising contacting the mesquite plant with a phytotoxic concentration of a compound represented by the general formula



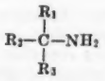
wherein A is a terpene radical selected from the group consisting of nopyl, hydronopyl and *oc*-terpinyloxyethyl, R' is selected from the group consisting of H and CH_3, and R is selected from the group consisting of 4-chlorophenoxy, 2,4-dichlorophenoxy, 2,4,5-trichlorophenoxy, 2-methyl-4-chlorophenoxy, and 2,4-dichlorophenoxyethyl.

2,868,687

Fungicidal and Bactericidal Compositions. Patent issued Jan. 13, 1959, to Carleton B. Scott, Pomona, Cal., assignor, by mesne assignments, to Collier Carbon and Chemical Corp. The method of preventing and controlling the growth of fungi and bacteria on plant materials which comprises applying thereto an effective fungicidal and bactericidal amount of the product of reaction between substantially equimolecular amounts of dimethyl tetrathiophosphate and perchloromethyl mercaptan at a reaction temperature between about –10° C. and about 60° C., said product being a viscous amber liquid distilling above about 150° C. under 1 millimeter pressure.

2,868,674

Rodent Repellent Binder Cord. Patent issued Jan. 13, 1959, to Pranas Jucaitis, Chicago, assignor, by mesne assignments, to International Harvester Co., Chicago. A binder cord having incorporated therein a rodent repelling composition consisting of an amine having between 10 to 18 carbon atoms having the general formula:



where R_1 and R_2 are selected from the group consisting of alkyl radicals, aryl substituted alkyl radicals, and hydrogen, and R_3 is selected from the group consisting of alkyl radicals and aryl substituted alkyl radicals and substantially a stoichiometric equivalent of an organic acid selected from the group consisting of naphthenic acids, butyric acid and salicylic acid.

2,868,688

Stabilized Pesticidal Compositions. Patent issued Jan. 13, 1959, to Hans A. Benesi, Berkeley, Cal., Yun Pei Sun and Erwin S. Loeffler, Denver, Colo., and Kenneth D. Detling, Orinda, Cal., assignors to Shell Development Co., Emeryville, Cal. A stable solid, pulverulent biocidal composition comprising as toxicant a polyhalogen-substituted organic compound comprising at least one pair of fused carbocyclic rings having from 3 to 7 ring carbon atoms in each of the rings of said pair and a plurality of atoms of halogen substituted on at least one of said carbocyclic rings, as adjuvant a substantially toxicologically inert pulverulent, solid diluent, said diluent normally having an intrinsic acidity represented by a pK_A less than 0, and an acid-neutralizing agent transfused throughout the composition in an amount at least sufficient to neutralize the intrinsic acidity of said diluent to a value not less than 0 and up to 25% by weight of the said diluent.

New Research Professor

NEWARK, DEL.—Dr. George T Felbeck, Jr., has been appointed assistant research professor of agronomy at the University of Delaware, according to George M. Worrilow, dean of the school of agriculture. Dr. Felbeck will be concerned with basic research with soil organic matter. He said his main interest will be to find out what organic matter is and what it does. Dr. Felbeck received his B.S. degree from the Massachusetts Institute of Technology, and both his M.S. and Ph.D. degrees from Pennsylvania State University.

GEORGIA PROGRAM

(Continued from page 1)

ents registered gains in 1958. There was a 26.7% increase in nitrogen, 9.3% in phosphate and 18.3% in potash. Although 9.4% more nitrogen was used in mixed fertilizers in 1958, the greatest gain was from materials. Nitrogen applied as materials increased 45% in 1958 over 1957.

Farmers used less low-analysis non-recommended fertilizers. About 24.9% of the fertilizer used in the six-county area during 1957 consisted of non-recommended grades, such as 4-8-8 and 4-8-6. But only 14.7% of the fertilizers used in 1958 were non-recommended grades. About 28,281 tons of 4-8-8 and 4-8-6 fertilizers were used in 1957 as compared to only 17,379 tons during 1958. The consumption of 4-8-6 decreased 58% and 4-8-8 about 32.1%. It is estimated that this reduction in low analysis fertilizer saved farmers $84,000.

Farmers used more high-analysis, recommended fertilizers. Consumption of 5-10-15 fertilizer in the six Soil Fertility Program counties increased from 3,027 tons in 1957 to 19,937 tons in 1958—a gain of 558.5%. In fact, about 92% more 5-10-15 fertilizer was used in the six fertility counties during 1958 than was used in the entire state in 1957. Similar, but less striking, increases were noted for other high-potash fertilizers, such as 3-9-12 and 3-9-13.

Consumption of 4-12-12 fertilizer increased from 64,196 to 70,663 tons —or 10.1%—in 1958 as compared to 1957. Also, about 41% more 0-12-12 fertilizer was used in 1958.

Many farmers used a different kind of fertilizer. About 90.1% of the fertilizers used during 1957 contained an even amount of phosphate and potash, such as 4-12-12 or 6-12-12, as compared to only 80.2% in 1958. Approximately 6.6% of the fertilizers used in 1957 contained a high phosphate-low potash content as compared to only 3.2% in 1958.

The big shift occurred in fertilizer ratios with a low phosphate-high potash content, such as 5-10-15. About 3.3% of the fertilizers used in the six counties during 1957 consisted of low phosphate-high potash fertilizers as compared to 16.6% in 1958.

However, notwithstanding the progress made in this program toward use of the right fertilizer ratio, many farmers in the six counties are still using the wrong kind of fertilizer.

The average nutrient content of mixed fertilizers increased. Fertilizers used in the six counties in 1957 contained an average of 25% plant nutrients as compared to 26.4% in 1958. Most of this increase was due to potash. The average potash content of fertilizers used in 1957 was 10.5% as compared to 11.5% in 1958.

Farmers used more nitrogen. About 3,040 tons more actual nitrogen were used during 1958 than in 1957. Although the consumption of all nitrogen materials increased, there was a definite trend to high analysis materials. About 9,132 tons of ammonium nitrate were used in 1957 as compared to 13,381 tons in 1958—a gain of 46.5%. Anhydrous ammonia usage increased 191.5% and liquid nitrogen 9.4%.

Farmers used more lime. Although no accurate figures are available on lime consumption, suppliers in the six-county area have indicated that lime consumption was three to five times greater in 1958 as compared to 1957.

Crop yields were increased. According to county agent estimates, the average corn yield in the six counties was 39.8 bu. per acre in 1958. This is an increase of 121% over the 1951-55 Crop Reporting Service average of 18 bu. The average cotton yield in the six counties was estimated to be 462 lb. of lint per acre. This is an increase of 56% over the 1951-55 average of 296 lb.

A nine-county check area, with similar soil and climate conditions, was selected to compare with crop yields in the six-county soil fertility area. Corn yield was 6.7 bu. and cotton yield 43 lb. of lint greater in the six-county fertility area than estimated yields of these two crops in the nine-county check area. The value of these yield increases amounted to approximately $3,712,000.

In other words, the increased yield from just two crops in the six fertility counties as compared to the nine-county check area offset the $1,238,000 spent for additional fertilizer in the six fertility counties by about $3 to $1.

In summary, this program has shown that a well-organized team approach to soil fertility problems by enthusiastic workers can have a tremendous beneficial influence on more efficient fertilizer usage. Soil samples in the six Intensified Soil Fertility counties spurted from 2,200 in 1957 to 14,014 last season—or six times as many. Also, this report shows that soil tests can play a major role in focusing attention on use of the right kind and proper amount of fertilizer and lime for the most economical production of crops.

Soil Management Subject Of California Conference

BERKELEY, CAL. — Better soil management and the improvement of range conditions are two subjects which will be discussed at the Farm and Home Conference sponsored by the college of agriculture of the University of California, which will be held on the Davis campus Jan. 30-31.

On Jan. 30, D. G. Aldrich of the department of soils and plant nutrition, will lead a panel on "Soil and Water Management and Conservation Program." Milton Fireman, extension soils and water specialist, will talk on the management of saline and alkali soils as part of the panel, and he will be followed by Dr. Aldrich, who will talk on "Fertilizers and Their Use in California Agriculture."

During an afternoon panel on the range and pasture program, there will be discussions on improving the range and management practices.

Sinclair Changes Name

NEW YORK—The name of Sinclair Chemicals, Inc. has been changed to Sinclair Petrochemicals, Inc., according to John A. Scott, president. He said that all personnel, offices and operations remain unchanged.

Special Merchandising Section

Better Selling

Marketing News and Features

Aggressive Selling Ups Firm's Sales

By JESS F. BLAIR
Croplife Special Writer

The Adkins-Phelps Seed Co. of North Little Rock, Ark., has not been seriously affected by the reduced usage of fertilizer in Arkansas the past two years. Although acreage restrictions on cotton cut down on fertilizer sales, this firm has been selling as much as ever. And the allied products, such as pesticides, livestock and poultry remedies have greatly increased.

JAY CURTIS, left, is the aggressive sales manager of the Adkins-Phelps Seed Co. (below), of North Little Rock, Ark. Mr. Curtis has been instrumental in setting up a number of retail outlets in that part of the country.

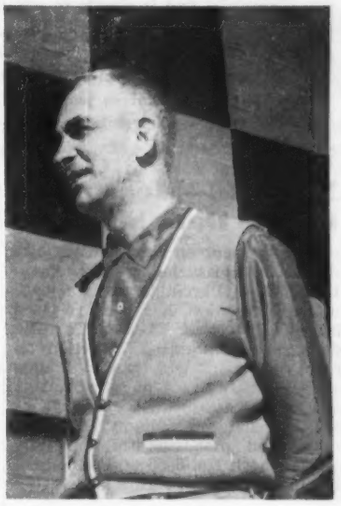
Part of this boost has come about because of an aggressive promotional and advertising program. Sales manager Jay Curtis is a young man who believes in creating markets. This is done by first finding a need, then promoting it and giving the customers the kind of service needed in getting it started.

Mr. Curtis has five outside salesmen who sell for the main store in North Little Rock and two others just across the river in Little Rock. In addition to calling on retail customers, the salesmen work with several retail dealers in other towns.

"We recently added a fertilizer specialist to our staff," he said. "This man is a trained agronomist and knows all about fertilizers and plant needs. We have found our poultry and livestock specialists are invaluable, and the new man is also proving his worth."

One way in which the specialist is being used: When a salesman contacts a farmer who seems interested in some product, his name is given to the office. The specialist goes out to visit the man, and together they may work out a program on fertilizing the fields or perhaps growing some new type of crop. There is a planned effort to make this man a steady customer, one who will not only buy his fertilizer from Adkins-Phelps, but all his farm needs.

These specialists spend as much time with farmers as necessary in getting them started on a sound farming or poultry or livestock program. They help with sick animals, nutrition, sanitation or field pests.



DAVID PHELPS, above, is president and co-founder of the Adkins-Phelps Seed Co. in North Little Rock, Ark. Says Mr. Phelps, "We had to change to creative selling because selling methods have changed."

Another way that Mr. Curtis has sold fertilizer is with field plots. Often this can be worked in with the company's seed sales by having a small plot planted with Adkins-Phelps seeds and then treated with various kinds and amounts of fertilizer.

These plots are on various farms, usually close to a road, and they are made known to farmers throughout the area. When crops are far enough along for a comparison, the store has a field meeting and the results given to those present. These field plots are not too expensive when comparing the number of extra sales that follow.

The Adkins-Phelps Seed Co. is one of the biggest advertisers in the city. Four of the main media have been used: radio, television, newspapers and direct mail. Mr. Curtis feels that the latter two are most effective.

"Quite often we run a special ad in which the customer may clip and bring a coupon to the store," he said. "On one, as I remember, we gave 50¢ on a bag of fertilizers. Another time we knocked off 50¢ on some plants, and had to service 5,000 coupons."

Direct mail is used extensively in the 60-mile radius from headquarters.

(Turn to **AGGRESSIVE**, page 15)

Texas Dealer Shortens a Long Walk In Store; Stepped-Up Profits Develop

By FRIEDA and SAMUEL HYATT
Croplife Special Writers

Johnny R. Parker, owner and manager of the Agricultural Supply of El Paso, Inc., El Paso, Texas, took a look at the layout of his store and decided 100 ft. was too far for a customer to go to get 25 chicks and about $2 in supplies. Now the distance traveled by the customer is 10 ft. and profits have stepped up.

Young Mr. Parker established his business in 1955. He opened his 60 by 80 ft. building July 1. Alert to the needs of his customers, Mr. Parker studied his building. He decided the layout was too scattered. In one corner of the building were chickens. In another corner, poultry equipment. In the back of the building was the register.

In 1956 he put up a sales room, 40 ft. wide and 21 ft. long. Now the customer can go from the chick room right outside and get equipment. In the sales room all items are on open display, full use is made of display material furnished by suppliers, and Mr. Parker says: "We now have a wonderful volume in impulse items. At the same time we try to have merchandise to meet seasonal needs and problems."

Mr. Parker, a graduate of New Mexico A&M with a B.S. degree in agriculture, knows what he wants to do for the trade and where he wants to go. He says: "I want to take care of people who are in the city limits." This youthful dealer wants the businesses that are in the city limits to continue producing. This means taking care of their needs and problems.

Under the heading of needs is the large volume of stock carried at this store. The firm also has Agricultural Supply No. 2 in El Paso. Store No. 1 has sales of $250,000. Mr. Parker reports: "Since I have been in El Paso my volume has increased 20% annually."

The firm carries a large stock of sprayers, insecticides, fertilizer, seeds, veterinary products and feeds. Garden tools, sprinklers, water hose, lawn and garden supplies, baby chicks, and baby turkeys are all in full view and are profitable lines for the firm.

From February to June more than 100 cash sales a day were chalked up in the attractive sales room built because things were "too scattered." They are all impulse items, right over the counter.

This farm store operator is enthusiastic about his credit system. He notes: "The $10 I pay a month to be a member of the credit bureau is money well spent. My credit cycle begins with the customer. If he says to go ahead and establish his credit I call the credit bureau. Their records list 250,000 individuals in the El Paso area. The bureau does the phoning to determine the person's credit status."

"I am furnished three types of no-

(Turn to **SHORTENS WALK**, page 16)

A NEAT ATTRACTIVE front, ample parking space and topnotch displays are features of the Agricultural Supply of El Paso, Inc., El Paso, Texas. Twelve cars can be parked comfortably along the front and side of the building.

What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6856—Measuring Device Data Sheet

A data sheet on the Fumiscope, a device for measuring the concentration of methyl bromide gas in a space under fumigation, has been released by the Robert K. Hassler Co. The data sheet contains information on how the instrument works, photos and illustrations of the instrument and a graph. Also included is a specification list containing size, weight range and other information. For copies, check No. 6856 on the coupon and mail to this publication.

No. 6857—Fertilizer Mixer Spreader

Simonsen Manufacturing Co. announces a fertilizer mixer spreader. The 3C Mixer Spreader has a three-

compartment box mounted on a truck, each to hold one of the basic chemicals—nitrogen, phosphate and potash nutrients. Each compartment has its own endless conveyor belt of stainless steel construction, the company says. A control gate for each compartment allows exact flow of each fertilizer component, the company says. For complete information about this product, check No. 6857 on the coupon and mail to this publication.

No. 6858—Film on Plant Deficiency

The American Potash Institute announces a color film on signs of potassium deficiency in plants. The strip presents, the Institute says, typical potash deficiency symptoms in a number of field crops, vegetables, fruits, forage crops and some ornamentals. It is a single frame 35mm strip, the company says, with 22 pictures and script featuring such hunger signs as poor growth, leaf scorch, poor root development, weak and lodged plants, poor seed and fruit quality. For information about securing films, check No. 6858 on the coupon and mail to this publication.

No. 7312—Drum Cover Data Sheet

Drum covers to prevent dusting and contamination during automatic weighing of chemicals, powders and other materials are described in a product data sheet (5804), offered by Richardson Scale Co. The sheet explains how the drum covers operate plus how the automatic scale units operate with the drum cover being used. Optional arrangements for increased capacity are also listed. Photos and illustrations are contained in the sheet. For copies, check No. 7312 on the coupon and mail.

No. 7314—Aluminum Bulk Trailer

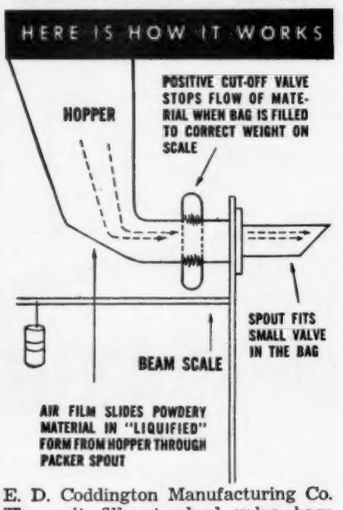
A hopper bottom, aluminum dry bulk trailer, designed to haul lighter weight materials such as feed, grain and fertilizer, has been announced by Butler Manufacturing Co. The trans-

ports are available in a choice of unloading models: A center unloading gravity dump model or a swivel mounted auger model that discharges to the rear or either side of the trailer. Manholes are 30 in. by 72 in. and slide gate outlets are 24 in. by 42 in. For more complete information, check No. 7314 on the coupon and mail to this publication.

designed to replace the company's former HO model. The unit's load carry capacity is 9,000 lb. at travel speeds. Both gas and diesel power units are offered. Buckets to handle materials of various weights are available in sizes from 1½ to 5 cu. yd., S.A.E. rated bucket sizes. A "low profile" front shroud gives the operator improved visibility, the company says. For complete information, check No. 6853 on the coupon and mail to this publication.

No. 6843—Valve Bag Packer

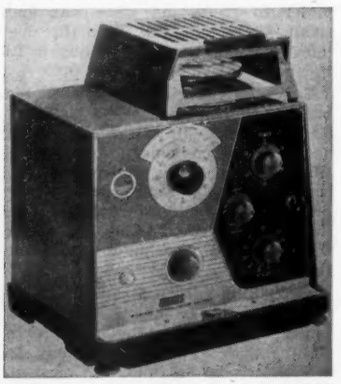
The fluidizing air principle of conveying powdery and free flowing materials is employed in the new Air-Pac valve packer introduced by the



E. D. Coddington Manufacturing Co. The unit fills standard valve bags from 20 to 100 lb. No moving parts are used, the company says, and no motor is required. The packer is ready to operate when connected with a 110 volt AC service and to standard low capacity air compressor system. A built-in scale provides weight control and shuts off the packer automatically when desired weight is reached. Check No. 6843 on the coupon and mail for details.

No. 7305—Moisture Balance

The Ohaus Moisture Determination Balance is a combination drying unit and precision balance which provides an easy way to measure moisture content of a wide variety of



products and materials, announced Seedburo Equipment Co. The unit can be used for solids or liquids and shows the percentage of moisture directly to plus or minus 0.170. The percentage of moisture loss can be read directly throughout the entire cycle as the moisture is driven off, the company says. For details, check No. 7305 and mail to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6852—"Crop Protector"

Finco, Inc., is marketing a self-propelled unit called the "Crop Protector" which sprays, dusts, defoliates, tops, seeds, fertilizes and applies granular DDT, according to company literature. Described as a high clearance machine, the "Crop Protector" is recommended for cotton, corn, tobacco, peanuts, grains sorghums and other row crops. The unit is available in horsepower sizes of eight, 18 and 25 and can spray more than 200 acres per day, it is claimed. A folder describing the unit is available by checking No. 6852 on the coupon and mailing it to this publication.

No. 6853—4-Wheel-Drive Tractor Loader

The Frank G. Hough Co. announces a rubber-tired, four-wheel-drive model "H-90 Payloader." The unit was

Send me information on the items marked:

- ☐ No. 6843—Valve Bag Packer
- ☐ No. 6846—Pesticide Fact Book
- ☐ No. 6852—"Crop Protector"
- ☐ No. 6853—4-Wheel-Drive Tractor Loader
- ☐ No. 6854—Material Classifier
- ☐ No. 6855—New Sprayer Handle
- ☐ No. 6856—Measuring Device Data Sheet
- ☐ No. 6857—Fertilizer Mixer Spreader
- ☐ No. 6858—Film on Plant Deficiency
- ☐ No. 7301—Folder on Batch Mixer
- ☐ No. 7305—Moisture Balance
- ☐ No. 7307—Aluminum Scraper
- ☐ No. 7312—Drum Cover Data Sheet
- ☐ No. 7314—Aluminum Bulk Trailer

(PLEASE PRINT OR TYPE)

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COMPANY .....

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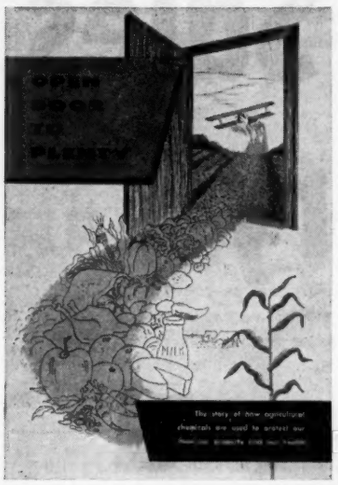
Reader Service Dept. Minneapolis 40, Minn.

No. 6846—Pesticide Fact Book

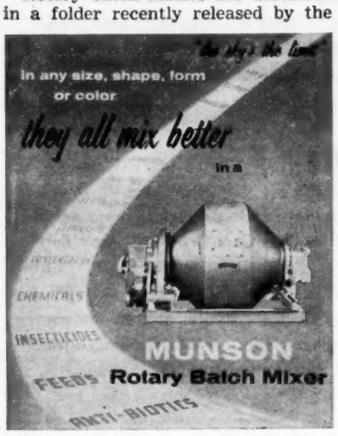
Publication of the "Open Door to Plenty," a pesticide industry fact book, has been announced by the National Agricultural Chemicals Assn.



The book tells the story of agricultural chemicals and how they are used. The 64-page illustrated booklet reviews progress which has been made in pesticides and reports on future advances which are expected in the industry. For copies, check No. 6846 on the coupon and mail to this publication.

No. 7301—Folder on Batch Mixers

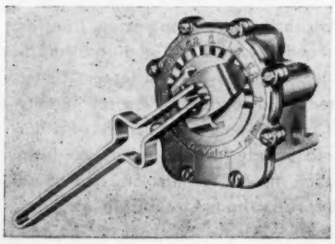
Rotary batch mixers are described in a folder recently released by the



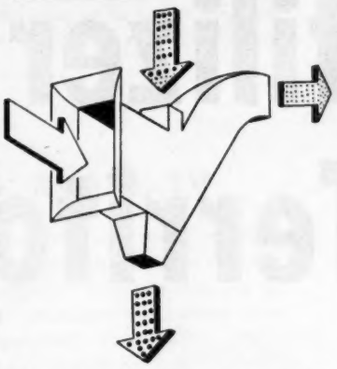
Munson Mill Machinery Co. The four-page, two-color folder contains pictures and specifications of two types of mixers—Type 4 and Type 7. Optional features of the mixers, such as quick-open door, internal vent, air control cylinder, flush valve, strip heater and internal spray pipe, are also described. For copies, check No. 7301 on the coupon and mail to this publication.

No. 6855—New Sprayer Handle

Spraying Systems Co. announces a change in its overall line of TeeValves for selective spray control in boom spraying. Design of the operating control handle has been modified to provide a hand grip stop, so that position of the operator's hand will remain clear of the valve, preventing accidental chafing of the fingers, the company said. Selection of valve setting is made by rotating the control handle to any desired indexed position. For complete information, check No. 6855 on the coupon and mail to this publication.



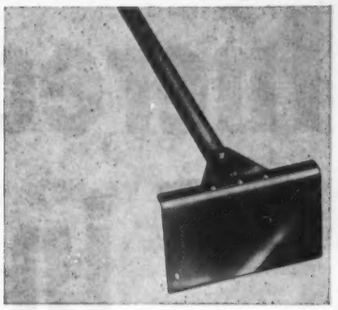
No. 6854—Material Classifier



A "Gravitational" classifier which utilizes gravity, drag and centrifugal forces to separate dry fines from course materials has been announced by the Buell Engineering Co. The unit has no moving parts and can be used in classifying fertilizers, chemicals and many other materials. Material enters the classifier at the top and low velocity air is blown through it at right angles. The air stream then turns sharply upward and passes between widely spaced vanes. In doing so it collects particles smaller than a given size. For details, check No. 6854 on the coupon and mail to this publication.

No. 7307—Aluminum Scraper

An all-aluminum hoe which can also be used as a scraper has been introduced by the Aluminum Ladder Co. The tool can be used for removing or scraping dry chemicals, feedstuffs and other materials from vats, tanks, barges, storage bins and other containers. The hoe is lightweight,



non-corrosive, non-splintering and non-sparking. The blade is 6 in. deep and comes in 17 to 20 in. widths. For details, check No. 7307 on the coupon and mail.

A 12-POINT PROGRAM TO Increase Fertilizer Sales in Your Territory

For more than twenty-three years, the American Potash Institute has helped expand the markets for fertilizers on American farms.

During this period, the tonnage of fertilizers purchased by American farmers has made the most dramatic gains in the history of the fertilizer industry, going from slightly over 6,000,000 to more than 22,000,000 tons a year.

These tonnage gains have been the direct result of an increasing awareness by farmers of the role balanced fertilizer programs can play in more profitable farming. Many groups and individuals have helped.

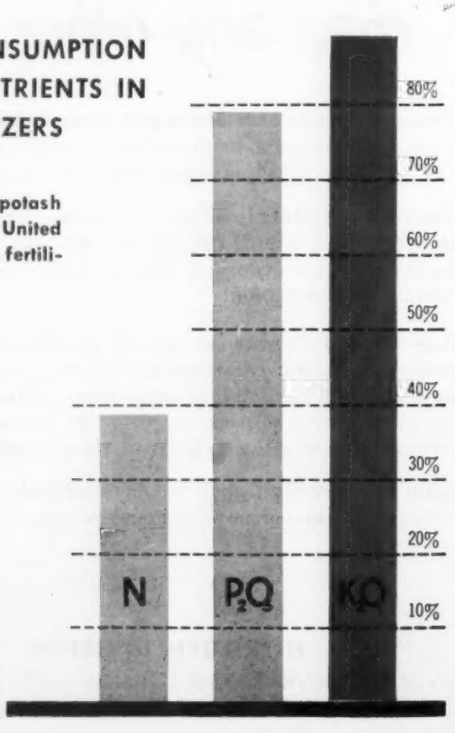
The American Potash Institute is proud of having shared in this joint effort. It is a service organization, designed to help you expand the use of balanced plant foods.

You are invited to take advantage of the many Institute services. They will help you sell fertilizer. Simply mail the coupon at the bottom of the opposite page, or get in touch with the American Potash Institute representative in your area.

This service brings tonnage-building soil fertility facts you can use.

RELATIVE CONSUMPTION OF PLANT NUTRIENTS IN MIXED FERTILIZERS

Nearly 87% of the potash consumed in the United States is in mixed fertilizers



SOURCE
U.S. Department of Agriculture, June, 1958 (ARS 41-19-1)

WALL POSTERS

NPK Potash Institute charts, on nutrient deficiencies, plant food utilization by crops, and other soil fertility topics, have become standard sources of farm knowledge on fertilizers. These charts are available for your use, for display purposes. They will help you sell more fertilizer.

SPECIAL BOOKLETS

NPK Mail the coupon for a complete listing of special booklets. These include "Fertilizer Placement," "Hidden Hunger In Crops," "Potash Deficiency Symptoms," "Forest Fertilization," and "Potash In Agriculture." They will help you help your customers.

COLORED SLIDE SETS

NPK For use in any standard slide projector. These include "Successful Alfalfa—You Can Grow It," "Soil Fertility and Soybeans," "Potassium Hunger Signs," "Safe and Efficient Fertilizer Placement." Each set with its own narration. Excellent for dealer or customer meetings. Used by fertilizer industry, teachers and agricultural advisers for classes and farm meetings.

MOTION PICTURES

NPK For dealer meetings, customer meetings, or showing on local television stations, use a free-loan Potash Institute motion picture. Full color 16 mm. sound pictures on soil testing, deficiency symptoms, tissue tests, and other subjects. Over 300,000 people see them annually. Mail coupon for complete information.

REGIONAL NEWS LETTERS

NPK Keep you informed on soil fertility subjects in your area. A time-saving digest of information on subjects important in your particular region. Extra copies also available for your customers.

BI-MONTHLY MAGAZINE

NPK The American Potash Institute's magazine, "Better Crops with Plant Food," is read and studied by agricultural leaders the nation over. Articles in "Better Crops" are written by authorities in the soil fertility field. In addition to articles on the fertilization of major crops, other subjects include forest tree nutrition, lawn and turf fertilization, flower fertilization, and house plant care and fertilization. Circulation exceeds 25,000.

REPRINTS OF SOIL FERTILITY ARTICLES

NPK Reprints of soil fertility articles, appearing in "Better Crops with Plant Food," are used by the fertilizer industry as direct mail or over-the-counter fertilizer educational material. They also go to high school and college classes. Between 300,000 and 400,000 are distributed annually.

AID TO FARM PRESS, RADIO, TV

NPK Potash Institute staff members work closely with farm magazine editors, radio and television farm directors. Many articles, photos and broadcasts stressing improved soil fertility practices have been originated or aided by Institute agronomists. These articles, pictures and broadcasts help you sell more fertilizer.

FERTILIZER DEMONSTRATIONS

NPK In cooperation with official agricultural agencies, the Potash Institute supports field demonstration programs which show farmers the value of correct fertilizer usage. Check your nearby Institute representative for demonstrations in your area.

REGIONAL AGRONOMISTS

NPK These men are practical scientists, well informed in the agriculture of the particular area in which each serves. Contact the one nearest to you, which can readily be determined from the map, below. You will find him ready to advise and help you in every way he can.

ABSTRACTS OF SOIL FERTILITY ARTICLES

NPK A valuable and time-saving service. Abstracts of scientific and technical articles on soil fertility from journals and bulletins the world over.

FELLOWSHIPS, RESEARCH GRANTS

NPK American Potash Institute graduate fellowships and research grants in some forty states and provinces have developed information on improved fertilization practices leading to increased usage.

They have also helped train a large number of professional agronomists for responsible positions in the fertilizer industry, colleges, experiment stations and the federal government.

There's a Potash Institute man near you . . . call him!

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- ☐ Bi-Monthly Magazine "Better Crops"

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Doing Business With

Oscar & Pat

It was bitter cold and an east wind brought a blizzard which steadily dumped snow on the little town. It had been snowing for six hours now, and at 2 p.m. there wasn't a farmer to be found in the entire town; all had hurried home to hole in "for the duration" and to be on hand to milk and feed the dairy cows and feed the pigs and chickens.

Pat McGillicuddy walked up and down the lonely salesroom. It was plain to see that he was nervous and frustrated.

"Look at it snow," he said to Tillie. "If it keeps up like this, there'll be fifteen to twenty inches by morning. We haven't sold a bit of fertilizer today. And no orders have come in. Gee, it's dead around here when there are no farmers in town."

Oscar looked up from his discount work. "Ach, it is only the deadbeats that hang aroundt anyway. The good farmers phone in their orders and pay cash for what they buy, or send a check quick."

"It's not just the cash customers that keep up a business," put in Pat quickly. "Many customers are strapped for immediate funds, but they can pay in two or three months."

"Or six or eight," said Oscar sarcastically. "'Ach, the longer they wait the longer they have our money at no interest, so we can't use it or take discounts. McGillicuddy, can't you get that through your noodle?"

"I know what I can do," Pat said eagerly, easing his lanky frame into his office chair. "I can telephone farmers and try to sell fertilizer for spring delivery. Maybe in three or four weeks this snow will be melted and spreading can start."

Oscar picked up two typewritten sheets of paper. "Before you sell them any more schtuff," he said, "collect a few of these bills. They are big enough to choke a horse."

Pat frowned and started studying the desk. "You know, Oscar, a man can't collect and sell a customer on the same call."

"Then collect first and don't worry about sellink."

"But if we don't sell, how can this business go on?"

Oscar snorted. "Ach, and if we don't collect, how can the business go on?"

"Oh, we have always gotten enough money in to operate," Pat said irritably.

"Only because I check on you," Oscar accused. "I ride you on collections. I ride the farmers who don't pay. They know it."

"Sometimes I think you ride customers so much maybe we won't have any business at all in a few years."

Oscar's face got red. "That kind of business we drive away, McGillicuddy, that kind we can get along without. They're dead beats."

"Oh, come now, Oscar. Every customer is not out to beat us. We've got to be more friendly, more cooperative. I've just been thinking of a new business idea we should put into effect."

"A new idea in this weather? Ach, do you expect farmers to put on skis and come in and buy fertilizer chust because you sell it?"

"No, but I know that winter is a lonely time on a farm. Especially when it's zero weather and cold, and a man has no place to go after he's got his chores done."

"He can go in the house," Oscar said practically, "and see that his wife hasn't got too many lights on, or is watching television too much. Or maybe spending too much time telephoning."

Pat smiled wryly. "A woman doesn't want a man around the house too much on any day, Oscar. Haven't you learned that? No, the farmer needs a place to go on such days when he has too much time on his hands. We should invite him to come here."

"Here—to buy?"

Pat pursed his lips. "Well, indirectly. We could put up two card tables and chairs and invite farmers to come in and meet their friends and play cards with them here. Free of charge, of course. And tell them we have free coffee all day long."

Oscar snorted with anger. "Giving something away again," he snapped. "McGillicuddy, why don't you get the money in instead of throwing it out all the time?"

"When those farmers are playing cards," Pat said, "they'll have to talk crops and fertilizer once in a while. And I'll have a chance to talk to them, too. And I can have signs posted close to the tables showing how the wise farmer invests in fertilizer for various crops. We'd sell enough extra fertilizer to pay for that free coffee we use."

"Okay, you sell them what you haf to sell," Oscar stated grimly, "and I will sell them what I haf to sell."

"What have you got to sell that's different from what I have?" Pat inquired curiously.

"Ach, you sell fertilizer. I sell 'pay up your bills idea.' My idea is goot, too."

"Oscar, you wouldn't dare to try to collect from some of those farmers when they are playing cards. You wouldn't show them up before their friends."

Oscar smiled in a sickly manner. "Ach, I sure wouldt. You think I am scared, McGillicuddy. Yah, you

bet I'm scared. I'm scared we won't get our money back the way you sell fertilizer on weak no-credit basis. I'm so scared I don't sleep some nights."

Pat sighed. "Well, it's no use, I guess. Every time I get a good business idea, you try to clamp down. Ye gods, what a partner. I guess I'll look at Croplife and see if somebody wants to sell out. Maybe I'll buy him out."

"Ach, with what?" Oscar inquired coldly.

Pat's face flushed. He rose quickly to his feet, slammed the copy of Croplife on his desk. "I've had enough for today. I'm going downtown, and I won't be back until tomorrow. Holy Cork, what a place."

"And I'm going home for today, too," Tillie announced putting on her coat and hat. "You fellows promised me you wouldn't fight anymore, or at least go out into the warehouse. You're not considering me. I'm going home to think it over. Maybe I won't be back."

So in the matter of a few minutes only Oscar was left in the big showroom except for Ann Hydrous, the grey Maltese cat, who eyed him warily from the top of a stack of magazines on the safe.

Oscar got up and marched around the showroom like a king, strutting here and there, snapping his suspenders. Then he stood near Pat's desk and unloosed a tirade against him, his business characteristics, his ancestry and a lot of other things.

Then he picked up the list of delinquent accounts and studied them for a moment. The more he studied the angrier he got. He took the list and sat down at his desk, and reached for the telephone.

"Ach, this is one chance I haf to talk turkey to some of those dumkopfs," he said. "Maybe I can collect $500 in a hurry before that Pat sells $500 more to slow pay accounts. I feel chust like tellink somebody a few things."

AGGRESSIVE

(Continued from page 9)

However, letters and circulars are not sent out indiscriminantly. Mr. Curtis has the cities blocked off according to type of homes and income brackets. If he is running a special on some expensive power lawn mower, none of the mail will be sent to the lower income sections of town. Likewise an announcement on field fertilizers will be directed to farmers and not city people.

"This pin-pointing of our customers cuts down on the expenses," said Mr. Curtis, "and the results are just as good. Some of these mailing pieces contain announcements on new products, others on seeds, field news and seasonal information. We also send out catalogues to many of our customers."

In pushing for more sales, the firm has worked out an incentive program for all employees. Each worker, from the custodians to the highest officials, shares in the profits at the end of the year. As a result, each employee tries to boost sales and increase the store's profits. Even the truck drivers try to hold down expenses as much as possible, and compete with one another on it.

"All our salesmen work on a commission," explained Mr. Curtis. "If they don't sell, they don't get paid. Each Monday morning I have a conference with the outside salesmen and two specialists. We discuss new products, work out programs, listen to complaints and try to suggest remedies for each problem. Often we will have on outside man, perhaps from the manufacturer or some other company, talk to us. With all of us working together, we know just exactly our progress and the work that lies ahead."

Another spur to greater sales is the bonus plan used by the company. If there is a need to push some product, the salesmen are given an extra percentage of the sales. Once when rat poison was in great demand, the salesmen were given an extra $2.50 for each case they sold. Occasionally the men will be given an extra 25¢ for each sack of fertilizer or mixed feed sold.

"It may sound surprising," said Mr. Curtis, "but sometimes our salesmen will make 35 calls a day. That's why you don't see any around the office. They're out beating the bushes for customers."

The president of the firm, David M. Phelps, was a co-founder of the company back in the 1940's. His partner was Homer Adkins, a former governor of the state. Since that time the business has grown from one small store to the three present ones, with a new one to be opened at West Memphis, Ark.

"Selling methods have changed," said Mr. Phelps. "We have had to change over to creative selling; that is, developing new markets close to home. We try to locate these markets within 30 miles of headquarters, then throw all the company's facilities behind the programs. We try to make each customer a profitable producer. If we can help that farmer or poultryman make a good living, then our own program is sound and will continue."

Management, Fertilization Keys to Big Corn Profits

The key to corn growing profits lies in cutting costs of production through good management and fertilizer use, reported the Midwest division of the National Plant Food Institute.

"Wisconsin research indicates that as corn yields per acre have been increased through greater use of plant food, costs of production per bushel have gone down," says NPFI.

"Dr. Kermit C. Berger, University of Wisconsin soil scientist, reports that average corn yields in the state have increased 20 bu. an acre in the past eight years—or from 43 bu. in 1950 to 63 bu. an acre in 1957. In that period the amount of fertilizer nutrients applied to corn has tripled.

"In the case of the 63-bu. average," he says, "costs per bushel can go down 20 to 30¢, depending on the individual farmer.

"As individual yields rise to 100 bu. or more, costs can go down 50¢ or more a bushel."

Lower costs mean higher profits, whether prices go up or down, NPFI points out. Thus the farmer with high yielding, low cost corn gets a bigger return for each acre he devotes to corn production.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Construction of SunOlin Chemical Co.'s $11 million urea plant at north Claymont, Del., is scheduled to start in March, 1959, and should go into operation by the end of the year, announced James I. Harper, SunOlin president. The 13½-acre site is adjacent to Sun Oil Co.'s refinery at Marcus Hook, Pa. Employment opportunities will be provided for about 40 persons.

The Alabama Soil Fertility Society, Inc., held its fourth annual meeting in Montgomery, Ala., and reelected Frank E. Boyd, southern agronomist for the Virginia-Carolina Chemical Corp., as president.

Mississippi Chemical Corp., Yazoo City, Miss., has announced plans for the construction of a $1.5 million urea plant at Yazoo City, said Owen Cooper, executive vice president. The plant will produce about 100 tons of urea a day.

U.S. Department of Agriculture scientists at Beltsville, Md., gave their blessing to a suggestion from Croplife that the heavy yields of crops in 1958 placed a heavy drain on basic plant food nutrients and that for the coming crop year prudent producers should reexamine their soil conditions, and prepare to reflect the drains on their soils with replacement values of plant food, reported John Cipperly, Croplife's Washington correspondent.

Consumption of fertilizers in the U.S. and territories of Hawaii and Puerto Rico during the year ending June 30 totaled 22,358,000 tons, a drop of 351,000 tons or 1.5% from that used in the preceding year, according to a preliminary report released by the U.S. Department of Agriculture.

Central Farmers Fertilizer Co. of Chicago shipped the first carload of rock phosphate from its Idaho phosphate works Dec. 19, according to announcement by Joseph L. Lanter, president of the company. The car was consigned to the Farmers Chemical Co., Joplin, Mo.

North Dakota Nitrogen, Inc., Bismarck, N.D., has been given approval to purchase government lignite piles at Garrison, N.D., according to Lynn W. Pine, Garrison district engineer.

American farmers have produced in 1958 an all-time record output of crops from the smallest planted acreage in 40 years, reported the U.S. Department of Agriculture in its annual crop summary.

Although production continues to exceed consumption, the situation in the world nitrogen market is not so pessimistic as statistics might indicate, was the opinion of Aikman, Ltd., London broker, in its annual year-end report on the nitrogen industry.

Present indications are that farmers will use more plant food in 1959 than at any time in the country's history, said Dr. Russell Coleman, executive vice president of the National Plant Food Institute. A combination of circumstances, Dr. Coleman said, is responsible for the optimism now prevalent in the fertilizer industry.

The U.S. Department of Agriculture felt that a possible slackening of farm income in 1959 could be seen by economists of the Agricultural Marketing Service, despite 1958's prices and farm income which averaged the best in five years. The economists felt that prospects are for continued heavy supplies of farm products generally, with wheat and feed grain supplies especially burdensome.

Bunker Hill Co. announced the acquisition of a phosphate property near Elliston, Mont., that could be used to supply its proposed $10 million treble superphosphate fertilizer plant, which is scheduled to be built at Kennewick, Wash.

Many factors may be responsible for failure to obtain cotton insect control, and all should be considered before placing the blame on any one specific cause, according to the Beltwide Cotton Production Conference Report on Cotton Insect Research and Control, released at the conference in Houston, Texas.

How to grow cotton for profits and markets was spelled out by cotton research workers to some 800 cotton industry leaders at the annual Beltwide Cotton Production Conference held in Houston Dec. 17-18.

Russia has the land, water, know-how and the people to do the job of increasing its production of cotton a considerable amount in the next 10 years, according to Dr. Billy M. Waddle, supervisory research agronomist with the U.S. Department of Agriculture, Beltsville, Md.

While the pesticide industry agrees that the Miller Amendment is a "good sound law," it believes that there can be developed some simplified procedures for determining toxicity and for registration of products for use in agriculture, J. V. Vernon, president of the National Agricultural Chemicals Assn., declared at a recent conference in Washington.

Fertilizer dealers attending their 10th annual conference with research and extension people at North Dakota Agricultural College are convinced that fertilizer business in North Dakota has successfully passed its launching stage and is on its way into orbit as a general farming practice in the state.

Examination of 1959 crop acreage probabilities reveals a solid basis for optimism over the market potential for fertilizer and pesticidal chemicals with emphasis on cotton and corn acreage increases over recent years, reported John Cipperly, Croplife Washington correspondent.

"Losses" to the industry in fertilizer overages range from five to six million dollars annually, the National Plant Food Institute reported. These losses result from fertilizer containing plant food in excess of that guaranteed by the manufacturer.

The problems involved in introducing new agricultural chemical products on the market received the attention of 350 chemical marketing and production specialists at a joint meeting of the Commercial Chemical Development Assn. and the National Agricultural Chemicals Assn. in Baltimore, Nov. 20-21.

JOHNNY PARKER, owner and manager of the Agricultural Supply of El Paso, Inc., El Paso, Texas, checks over a display of spraying equipment. Mr. Parker says he feels that related items should be placed conveniently near one another for the all-important impulse buyer. "We now have a wonderful volume in impulse items," he says.

SHORTENS WALK

(Continued from page 9)

tices to aid me in collecting my bills. Each is a different color. If the customer does not pay after receiving the final notice, I turn the account over to the bureau. They take 50%. Since I have not been able to collect any of it, in these cases, the 50% is like finding it."

Mr. Parker turns his stock over every 30 days. His hours are 8 to 6 and he has five employees. All of El Paso County in a radius of 50 miles is covered in the store's operations. The firm does custom mixing. In addition to talking formulas with farmers, Mr. Parker can help with many other problems on the farm and gladly discusses them with his customers.

He says: "The future looks good. El Paso is growing fast. In 1944 the population was 109,000. In 1958 it was 244,000. An example of the activity is an announcement in the paper a few days ago. A contractor purchased land on which he will erect 500 homes."

Agricultural Supply, in conjunction with its up-to-date sales room, has modern parking facilities. There is parking for 12 cars in the front and at the side of the building. Displays throughout the store are all very colorful and neat and many are animated. They appeal to the woman shopper, especially, he says.

"The farm store operator has to be on his toes," insists Mr. Parker. "As long as I can get people to feel that what they need can be secured at Agricultural Supply, I will have plenty of black figures popping out of the register. I think it is every farm store operator's job to take care of h's customer. That is what I try to do."

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Diversification of lines has been a profitable move for Frank's Seed & Hatchery, Greeley, Colo., says owner Frank Morris.

Mr. Morris owns an "uptown" location, requiring him to attract prospects walking and driving by. Sidewalk displays are used regularly to good advantage. Near the doorway he usually has a cage or two of parakeets or other pets, which will stop a certain percentage of the people, especially if children are along.

By rearranging island and wall displays, Mr. Morris has doubled in recent years the number of items for sale. He still sells baby chicks and poultry supplies, but the main increase in sales has come from farm chemicals, pet supplies, farm hardware and other items which were not sold a few years ago.

Considerable farm fertilizer is sold but there are also many sales of fertilizer, insecticides and herbicides in small packages. These are used on lawns and gardens and in many of the orchards in the area.

Mr. Morris also sells the equipment to apply them, such as sprayers, dusters, seeders and farm hardware. He says there is a definite upswing in pet ownership and enjoys a large turnover in pet supplies, including feeds, cages and medication. His animal health product shelves are restocked often, while irrigation and garden supplies push sales high during the warm months.

In discussing the methods used to make his store successful, Mr. Morris gives these pointers:

• "No matter what the business trend is," he says, "a wide-awake store owner can find some way to change his methods and survive. Here we merely adopted the plan of department stores, with the stress on farming angles."

• Stress courtesy and service. A farmer dickering for 10 tons of fertilizer may wait an hour on the owner, but if he wants to buy a half gallon of livestock spray, he won't wait 15 minutes. Mr. Morris has arranged his merchandise by island and wall displays so that 95% of the customers find their own items and bring them to the cash register.

• Advertise liberally. Mr. Morris uses newspapers and radio. He wants the old customers to know he is still in business and seeks their trade. The ads and radio spots help acquaint the new residents with the store.

RETAIL NURSERY

CORNING, CAL.—Fred and Evalyn Jacobson have opened a new retail nursery under the name of Jacobson's Nursery at 1103 West St., Corning. They sell various types of agricultural chemicals.

GRASSHOPPERS

(Continued from page 1)

rangeland areas where grasshoppers reach outbreak proportions.

These fall surveys are supported with spot samplings of eggs laid by the adult grasshoppers. Generally, these spot checks have borne out the findings of the adult fall survey, but in Oklahoma and Texas they have shown considerable parasitism of grasshopper eggs by blister beetles and bee flies.

Winter and spring weather will determine how many of the grasshopper eggs laid this fall will hatch into hungry insects next year, and weather in the spring will determine survival. Sample counts of newly emerged grasshoppers, to be made in the spring of 1959, will pinpoint areas that may need control.

Colorado, Montana and California have the largest rangeland areas with heavy grasshopper populations, followed by Wyoming, Utah, Oklahoma and Texas. In total acreage, states showing infestations ranging from "light" to "very abundant" were Colorado with 5,687,000 acres, followed by California with 4,523,000 acres, Texas with 3,460,000 acres, Oklahoma with 2,693,182 acres and Montana with 2,425,000 acres.

ARS entomologists point out that the effects of last summer's cooperative control campaign—largest since 1949-50—show up clearly in survey results. Few grasshoppers were found in many of the areas treated with insecticides, particularly in Colorado, Kansas and Texas. Approximately 5 million acres of rangeland and idle land were treated during 1958 in 13 western states to protect vast acreages of cropland from extensive grasshopper depredations. More than 2 million of these acres were in Colorado, and almost a million in Texas.

Cropland infestation is in general slightly higher than it was a year ago. Largest areas where grasshoppers are abundant are in Wisconsin and Oklahoma. Control of such lands is handled by the farmers with technical assistance from USDA and state pest-control agencies.

On rangelands, ranchmen bear a substantial share of the cost of insecticidal application. Pest control workers urge land owners to keep a sharp eye on potentially threatening areas so they can act promptly if spring surveys show that grasshoppers are hatching in abundance. The average annual loss to crops and range forage combined in the 17 states west of the Mississippi is estimated at $90 million.

Purchase of Kentucky Fertilizer Firm Announced

LEXINGTON, KY. — Purchase of the Burley Belt Plant Food Works, Inc., a fertilizer manufacturer, by Albert G. Clay, Mount Sterling; Herbert Moore, Cynthiana, and Gilbert Nooe, Maysville, was announced here. The plant was sold by Robert Terhune, Lexington, and Allen Peck, Sharpsburg, both of whom will continue with the firm.

West Virginia Alfalfa Fertilized Every Month

MORGANTOWN, W.VA.—Farmers interviewed by 47 county agricultural agents in West Virginia during 1958 reported they topdressed alfalfa with fertilizer during every month of the year. However, April was the big month for fertilizer use, with 60.7% reporting they topdressed their alfalfa then, R. J. Friant, extension agronomist at West Virginia University, pointed out.

March was second high with 17.6% reporting. September came in third with 5.2%, followed closely by May, 4.4%; June, 4.1%; October, 2.3%, and February, 2.1%.

Of those who topdressed their alfalfa, 39.6% used 0-20-20 fertilizer; 13.7% applied 5-10-10; 9.3% used 0-14-14; 4.8% used 2-12-12; 3.9% used 0-20-0; 2.3% applied 10-10-10; 2.1% used 0-14-7; 1.7% used 4-16-8, and 1.4% used 3-12-6.

FELLOWSHIP—Dr. Richard B. Bahme, western regional director of the National Plant Food Institute (right center), presents a $3,000 agronomy fellowship on behalf of NPFI for use at the University of California at Davis. Standing, left to right, are: Dr. D. G. Aldrich, Jr., department of soils and plant nutrients; Dr. R. M. Hagen, chairman, department of irrigation; Dr. Bahme, and fellowship recipient Ben Zur, who will utilize the grant to study soil moisture-fertility relationships.

Unprofitable Rate Of Fertilizer Use Noted by NPFI

FT. COLLINS, COLO.—Chemical fertilizers remain one of the farmers' very best buys. Yet only about 7% of western farmers use fertilizers at the most profitable rate. And an uncomfortably large number—about 55%—use no fertilizer at all.

This was revealed by Dr. Richard Bahme of the National Plant Food Institute. He spoke at the seventh annual fertilizer conference on the Colorado State University campus here.

By not using fertilizers, farmers are failing to take advantage of this method of reducing unit costs and thereby increasing their income, Dr. Bahme stated.

Reasons why farmers fail to use fertilizers at higher, more profitable rates were brought out in a survey which the institute made in 10 western states, including Colorado. These reasons, which often can be branded as misconceptions, are as follows:

1. They feel that fertilizers simply are not necessary, even though repeated experiments show that fertilizers can boost average crop production by 50% or more.

2. Lack of money. However, Dr. Bahme added, an increasing number of bankers are announcing their willingess—even eagerness—to finance fertilizer applications.

3. Farmers apparently believe that unfavorable weather is likely to have a much greater effect on results from fertilizer use. However, research indicates that fertilizer frequently can be used to help overcome unfavorable moisture conditions and to increase the efficiency of water use.

4. A few farmers still believe that organic fertilizers (animal and green manures) are the best source of plant foods. But Dr. Bahme noted that it is extremely difficult to apply enough organic fertilizer to obtain enough of the essential plant food elements. And, in the final analysis, these organic forms must decompose into inorganic nutrients in order to become available for crop use.

The study showed, Dr. Bahme concluded, that a more vigorous educational effort was needed to overcome these barriers to fertilizer use.

Scientists Attempt To Answer Tree FertilizationQuestion

RALEIGH, N.C. — "Under what conditions will it pay to fertilize trees?" is the basic question prompting a study now beginning at North Carolina State College. The study is being carried on jointly by the college's forestry school and its experiment station and Allied Chemical Corp.

Announcement of the research study was made by Dr. Richard J. Preston, dean, school of forestry, and Dr. R. L. Lovvorn, director of research, Agricultural Experiment Station, North Carolina State College.

Other questions the study will seek to answer are:

- What is the minimum amount of nutrients a tree can have in its foliage without being limited in growth by "hunger"?
- Is it possible to tell how much and what analysis fertilizer a tree needs by checking the nutrient level of soil and foliage?
- Can you trigger a growth response by applying the fertilizer these tests indicate the tree needs?

Emphasis in the study will be on development of sound, scientific techniques of diagnosis.

The current study is on loblolly pine, an important timber tree of the South and the nation. Sample trees have been selected from plantations on good sites, sites of medium quality, and very poor sites in the Piedmont and Coastal Plain Provinces of North Carolina.

Stem analyses are being made in each plantation to find the pattern of past growth in relation to age. From 50 trees on each site, foliage will be collected during the dormant season and analyzed for nutrient content, specifically, for nitrogen, phosphorus, potash, calcium and magnesium.

Simultaneously, soil samples will be analyzed to determine the total and available levels in the soil on the different sites. The resulting data will be correlated with the growth rate of the trees in an attempt to determine what nutrient factors appear to have the greatest influence on the growth of loblolly pine.

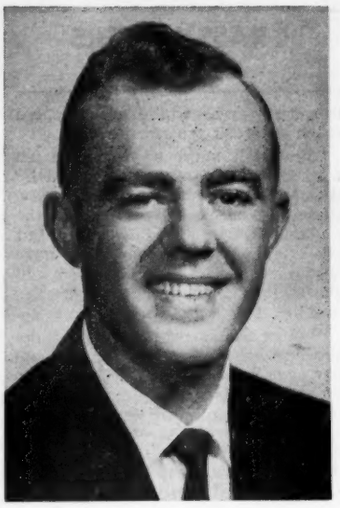
Subsequently, sample trees will be fertilized with different amounts of nitrogen, phosphorus and potash with and without lime, to determine the response of loblolly pine to these elements on the different qualities of site.

The study is believed to be the first of its kind to attempt diagnosing of the nutrient requirements of loblolly pine in a comprehensive way. The field work is being conducted by Emmett Thompson, a graduate of Oklahoma A&M College, who is now studying for a M.S. degree at North Carolina State College.

Project leader for the study is Dr. T. E. Maki, head of the college's department of forest management. Dr. Harvey J. Stangel, chief agronomist of the nitrogen division, Allied Chemical Corp.; Dr. Ralph McCracken, of the soils department, North Carolina State College; and Dr. David Mason, of the department of experimental statistics, are serving as advisers for the project.

Dr. Maki views the study as a possible break-through from experimental plot to commercial tree growing.

"We have shown through numerous experiments," Dr. Maki said, "that fertilizer will increase tree growth. Now we hope to determine how this knowledge can be put to practical use, exactly when, where and how a commercial tree grower should use fertilizers to realize the highest possible profit from his forest land."



Hugh H. Courtney, Jr.

JOINS SALES STAFF — Hugh H. Courtney, Jr., has joined the agricultural chemicals department of Commercial Solvents Corp. as a sales representative, announced Clyde T. Marshall, department manager. He will make his headquarters at CSC's district office, 550 Glenn St. S.W., Atlanta, Ga. Mr. Courtney will service fertilizer manufacturers in north Georgia, central and eastern Tennessee. For the past two years Mr. Courtney has been associated with the fertilizer industry. He attended Carson - Newman College and the University of Tennessee where he received a B.S. degree in agronomy.

Purdue Group Starts New Study Approach

LAFAYETTE, IND. — The Purdue Research Foundation and the Texas Co. have completed arrangements for initiating an approach to research on fertilizer manufacturing not now in operation in other agricultural colleges, a foundation spokesman said.

Usually research on fertilizer manufacturing ends with the fertilizer produced. In the new approach, agronomy will suggest desirable features for a fertilizer, chemical engineering will develop it, biochemistry will analyze the fertilizer for its compliance with nutrient content, and agronomy will test the new fertilizer for its crop production performance.

The proposed research will involve the school of chemical and metallurgical engineering and the departments of agronomy and biochemistry in the agricultural experiment station.

The first phase of the research, which will probably require most of the first year, will be primarily in the school of chemical and metallurgical engineering under the supervision of Dr. Lyle F. Albright, professor of chemical engineering. Dr. Albright will have Anantha Raman assisting him. Mr. Raman was previously employed in the fertilizer industry of India and has come to this country from the Institute of Science in India.

Dr. J. B. Peterson, professor and head of the department of agronomy, will supervise the testing of the fertilizers produced by Dr. Albright's group. Graduate students in agronomy will be used to assist in the testing of the fertilizers produced after the first year of work.

Dr. C. L. W. Swanson of the Texas Co., which is supporting the research financially, will have technical supervision of this research as a representative of Texaco.

It is hoped that the proposed research will produce information that will be of both theoretical and practical value to the fertilizer industry and to agriculture, the spokesman said.

Mid-South Chemical To Expand Ammonia Terminal Capacity

MEMPHIS, TENN. — The Mid-South Chemical Corp. is expanding the capacity of its river-rail-highway ammonia terminal at North Pekin, Ill., to 1,664 tons and building a new terminal of the same size at Mount Vernon, Ill., according to Ellis T. Woolfolk of Memphis, president of the concern.

Both facilities are for handling anhydrous ammonia, which Mid-South Chemical Corp. markets under the brand name Big N.

The company also operates a river-rail-highway terminal on Presidents Island in Memphis, one at Harlingen, Texas, and another at New Iberia, La. The ammonia is shipped up the Mississippi and through the Intra-Coastal Canal by barges from the manufacturing plant of Petroleum Chemicals, Inc., at Lake Charles, La.

Jesse D. Wooten, executive vice president, and David H. Bradford, Jr., vice president of Mid-South, explained that the Mid-West terminal expansions would help meet increased needs for anhydrous ammonia fertilizer in that area, where ammonia is being used on a steadily-growing list of crops.

The firm expects large volume in the Mid-South also. Mr. Bradford said, "Cotton farmers are finding they should use larger amounts of ammonia, and cattlemen are coming to appreciate the importance of fertilizing forage crops with anhydrous ammonia to stretch their acres further."

307 Farmers Attend Indiana Fertilizer School

GOSHEN, IND. — Three hundred and seven farmers attended four fertilizer schools conducted recently by the county agricultural agent's office here.

Cliff Spies, Purdue University specialist, emphasized that a fertilizer plan is a must for modern cropping systems.

Added yield from only 20 acres of corn is sufficient to pay for side band fertilizer attachment, Mr. Spies said.

Paul Robbins, another Purdue specialist, discussed the amounts of fertilizer to be used profitably.

Clay Cundiff, assistant county agent, said soil samples used to set up fertilizer programs will be accepted at the agent's office in the courthouse for the next three months.

Soviet Agriculture Tops Program Plans For Midwest Meeting

WASHINGTON — Fertilizer research reports, an experience summary on the crop production potentials program thus far and a first-hand review of Soviet agriculture will be features of the 11th Annual Joint Meeting of Midwestern Agronomists and Fertilizer Representatives in Chicago, Feb. 12-13, under the auspices of the Midwest office of the National Plant Food Institute.

Another feature will be the first showing of NPFI color film, "Cash In on Grass."

The two-day meeting will be held at the Edgewater Beach Hotel. Dr. W. P. Martin, head of the University of Minnesota's soils department, will be chairman and Dr. C. E. Smith, University of Missouri's soils department, will be co-chairman.

The agronomists, industry representatives and visitors will be welcomed by Richard E. Bennett of Omaha, president of NPFI, and Dr. Russell Coleman, executive vice president of NPFI.

Opening at 1 p.m., Feb. 12, the first day's program will include research reports by Dr. E. C. Doll, University of Kentucky; Dr. H. F. Rhoades, University of Nebraska; Dr. R. A. Young, North Dakota Agricultural College; and Dr. M. B. Russell, University of Illinois.

The "Crop Production Potentials" program review will be presented by Z. H. Beers, Midwest regional director of NPFI. The three Midwest field representatives, John R. Guttay, Edward R. Schumann, and Arlan Woltemath, will discuss activities in their respective areas.

Leading off the Friday morning program will be the showing of "Cash In on Grass." Dr. Lewis B. Nelson, Agricultural Research Service, U.S. Department of Agriculture, will report on "The Challenge of Soviet Agriculture." He will be followed by F. E. Hartzler, Kansas State Teachers College, whose topic will be "Is Profit a Bad Word?"

Two University of Minnesota specialists, Dr. Curtis J. Overdahl, and Dr. George R. Blake, will report, respectively, on "Minnesota's X-tra-Yield, X-tra-Profit Corn Growing Program," and "Soil Structure and Fertility Research."

The program will conclude with a report on "Agronomists 1959 Fertilizer Ratio and Grade Recommendations."

Prior to the meeting, research and extension agronomists from 13 Midwest states will hold a two-day conference.

J. W. Engle | W. L. Beales | C. R. Clemons | C. W. Barbee

EXPANSION CHANGES—Recent expansion and acquisitions by the American Agricultural Chemical Co., New York, have resulted in changes in organization, according to W. J. Turbeville, vice president in charge of fertilizer sales. J. W. Engle, former manager of AGRICO's East St. Louis branch will become manager of the western sales division, comprising AGRICO's offices at Danville, East St. Louis, and Fulton, Ill.; Seymour, Ind.; Humboldt, Iowa; and Olathe, Kansas. His headquarters will be at St. Louis. W. L. Beales, former manager of AGRICO's Saginaw, Mich. branch, will become manager of the northeast sales division, comprising AGRICO's offices at Baltimore, Md.; Buffalo and Three Rivers, N.Y.; Carteret, N.J.; North Weymouth, Mass.; and in Canada. Mr. Beales' headquarters will be in New York. C. R. Clemons, former manager at AGRICO's Buffalo, N.Y. branch, will become manager of the mid-southern sales division, comprising AGRICO's plants at Alexandria and Norfolk, Va.; Greensboro and Henderson, N.C.; Spartanburg, Charleston and Columbia, S.C.; and Savannah, Ga. His headquarters will be at Greensboro, N.C. C. W. Barbee, assistant agronomist at the AGRICO laboratory at Detroit, Mich., has been named agronomist for the Knoxville fertilizer division, according to O. C. Leetun, manager of the service division. The Knoxville fertilizer division comprises the plants and sales areas of the former Knoxville Fertilizer Co., which was purchased by AGRICO last fall. The division has plants at Knoxville, Nashville and Johnson City, Tenn. and at London, Ky.

WEED CONTROL

(Continued from page 1)

of the reservoir where the presence of such uncontrolled vegetation might contaminate the water or clog valves.

Since that time, the crew has been cut to three men doing chemical spraying for a few weeks each year, with resultant savings.

Some of the uses of herbicides in conservation were described by Justin W. Leonard of the Michigan State department of conservation, Lansing. He said that herbicides have two major uses in forest management.

First is its employment as a debarking agent for standing pulpwood and second, in the control of unwanted trees and brush. Chemical debarking agents would have considerable economic value, but satisfactory materials and methods of use still remain to be developed. Only sodium arsenite, so far, gives dependable results, but is too hazardous for general use, he said.

In controlling unwanted vegetation the forester employs herbicides in: (1) Improving accessibility and visibility for planting operations and in removing overgrowth which might weaken new plantings, (2) counteracting the adverse effects of overtopping by various species of non-merchantable trees, (3) control of oak wilt disease, and (4) controlling brush and undergrowth along roads, fire lines and rights-of-way.

Herbicides are useful also in game management, the speaker continued. They can be applied efficiently and economically to permit manipulation of environment to encourage growth of game populations. They are employed to create and maintain openings in woody growth and dense sod cover, to eliminate or change succession in aquatic vegetation, and to encourage sprouting of food and cover species of vegetation.

Aquatic weed control can contribute to fisheries management in several ways: (1) Favoring growth of algae rather than submerged plants and thus increasing fish populations, (2) exposing small fish to more efficient predation by removing weed cover, and (3) making lakes more accessible to sportsmen. There is a real need for the development of effective inexpensive herbicides which will eradicate both algae and higher aquatic plants without undue hazard to fish, livestock and humans.

Over the past year pelletized 2,4-D has been successfully applied over ice to control submerged weeds, he said.

Conservation agencies recognize herbicides as a valuable tool in the management of renewable natural resources. Present products and techniques, however, are still not sufficiently predictable to permit their use on a scale commensurate with the acreages actually needing treatment, Mr. Leonard concluded.

New chemicals for control of crabgrass were covered in a discussion by John E. Gallagher and Richard J. Otten, AmChem Products, Inc., Ambler, Pa. Since greenhouse and field screening trials in 1957 indicated that 2,5-dichloro-3-nitrobenzoic acid had properties of a pre-emergence crabgrass control chemical, an experiment was designed to compare rates of application, number of treatments, and treatment intervals. Standard materials as well as two other new experimental chemicals were included in this test, he reported.

They were: Dionbel (3% on vermiculite); Chlordane (76% emulsifiable technical Chlordane); Chlordane (8% technical Chlordane on vermiculite); PAX (lead arsenate, arsenous oxide, Chlordane); 2,4-D/2,4,5-T (esters in 2/1 ratio); and Alanap 1F (N-1 naphthyl phthalamic acid plus urea); "ACP XF 707" (2,chloro-4-fluoro phenoxy acetic acid); "Fenac S" (ACP-M-673); "Fenac WP" (ACP-M-674); and "Fenac E" (ACP-M-675).

Of all the treatments applied, "Fenac S" and "Fenac WP" appeared to be the most promising, the speakers said. Single applications of 3 lb. an acre produced 85% crabgrass control with no turf injury, while 6 lb. an acre produced 97% crabgrass control with only slight temporary turf discoloration, they reported.

Eugene Decker, resident director of the Westmoreland Sanctuary, Mt. Kisco, N.Y., told how the use of herbicides has proved helpful in management of nature sanctuaries. On some heavily-used public sanctuaries, he said, paths are kept bare by constant usage. On others, several problems are encountered in the maintenance of trails where activities are more restricted and seasonal.

The development of chemical herbicides has provided promising tools for the management of these trails. The simplicity of the equipment involved and the labor-saving factors of their use are both favorable considerations for their adoption. The herbicides also appear useful in other sanctuary management operations such as the elimination of grass from parking areas and drives, and the initial clearance of new trails.

Chemical herbicides were tested at the Westmoreland Sanctuary during the spring and summer of 1958. Four materials, various formulations of 2,4-D, 2,4,5-T and similar materials were used. Commercial formulations used are known as "Veon 245," "Garlon," "Kuron" and "Baron."

Results of the tests indicate that woody vegetation in paths can be adequately controlled with the application of a suitable herbicide in the late spring. The killed vegetation dried out rapidly, was easily knocked down, and the resulting path was quite natural looking, he reported.

The application of sprays to trails through old fields and openings in woodlands provided cessation of growth of grasses and an open, clear trail. For initial clearance of trails, a brush killer is sprayed on after the heavy material has been removed. The resulting path is pleasant to view and maintenance problems are limited to spot spraying of new growth.

Mr. Decker told the group that to obtain maximum effectiveness of the materials in a spray, the operation should be conducted during a period of low wind velocities and when the opportunity is unlikely for rain. Thorough wetting of the vegetation is necessary for effective killing, and the spray particles size should be regulated so that they are large enough to prevent drifting.

"Herbicides of the systemic hormone type have provided safe, efficient, and economical tools for use in the management of a nature study sanctuary type operation," he concluded.

Public health aspects of weed control were discussed by Dr. Floyd I. Hudson, executive secretary of the Delaware state board of health. He spoke of the specific problem of hay fever, caused of course by the presence of ragweed pollen in the air. "This is the biggest problem in the field," Dr. Hudson said. It was described 85 years ago and has been successfully combatted in some areas through the removal of pollen from the environment, desensitization of susceptible persons and treatment of such persons by drugs.

Although all of these means are successful to varying degrees, Dr. Hudson said that elimination of the weed causing the difficulty produces the "best and longest-lasting results."

He reported that chemical sprays against ragweed and poison ivy are both economical and effective. The goal of controlling these weeds is difficult but attainable. "However, no one agency or person can solve the hay fever problem in any community," he advised. "Combined efforts of a large number of agencies and persons are essential. This can be accomplished with coordinating committees. It is imperative that any such program enjoy a good public relations setup, in order that the general public can be well educated on the purpose and method of the drive. Public health educators in health departments can assist greatly in the development and operation of weed control programs."

Rains Stop Extended California Drouth

SACRAMENTO — Long-awaited rains recently brought an end to one of the longest drouths on record in California and grain, orchard and livestock men considered the outlook more promising.

Forage grasses immediately sprouted but are still too young to be of much value. Peach and plum orchards which had started budding receded into dormancy and dry seeded grains began to sprout.

Orchardists said the rains not only moistened the ground but also dampened down bark and branches, making it possible for dormant sprays to be applied to better advantage.

Here's Dixie Nitrogen's Double Barreled 1959 Advertising Program

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Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

THE 1959 SEASON . . .

Midwest, South and Other Areas Point to Promising Sales Potentials for New Year

SALES potentials for 1959 appear to be heartening, judging from reports from key sections of the national agriculture scene. Both fertilizer and pesticide prospects look as though they could develop further than anticipated earlier.

Since the Midwest states have contributed largely to increased consumption of plant foods in late years, it is significant when the outlook in parts of that area indicates even greater use.

Speakers at the recent Iowa fertilizer dealers' short course said that farmers in the state realize now more than before that the cheapest corn they can grow is the extra bushels on each acre. They are consequently using higher rates of fertilization.

One speaker, Dr. George Scarseth of the American Farm Research Assn., told the group that unless a farmer gears his corn yields to the maximum, he cannot survive the economic pressure and will eventually go out of business.

Moisture levels, of course, have a great bearing on fertilizer use, and prospects are good in this area, with some minor exceptions. The Midwest should see a continuation of its high fertilizer consumption rates during the 1959 growing season, and farmers in that area should be happy with the economic results.

In other parts of the country, too, fertilizer prospects are far from dim. With thousands of acres back in operation in the South after having been idled through the soil bank for the past couple of seasons, prospects there are brighter for 1959.

Farmers in North Carolina, for instance, have been advised by college authorities that net farm income in that state may be increased by some $400 million through good management practices and using lime and fertilizers at recommended rates.

Dr. J. W. Fitts, head of the department of soils at North Carolina State College, declares that such a boost is not only a possibility, but a reachable goal for most growers in the state. The increases, he said, are based on "realistic estimates on yield increases that are possible for most North Carolina farmers."

Here is the kind of argument presented to North Carolina growers by Dr. Fitts:

"A yield of 75 bu. corn on each of the 1,850,000 acres that were planted to this crop in 1957 would mean an increased income from this crop alone of about $120,000,000. A state-wide yield of soybeans of 34 bu. a acre would add another $18,000,000, while a yield of 200 lb. beef an acre would increase this figure by another $50,000,000."

"And so it is with all of the major crops grown in this state," Dr. Fitts continued. "The average yields proposed for these various crops are well within the limits and capabilities of most North Carolina farmers. In fact, in most cases the yields are only about one-half to three-fourths of what some farmers are already producing."

Not only corn, but other crops were also included in the list of potential users of additional fertilizers. Plant food should be applied in quantities to bring yields of 35 bu. an acre of wheat; 75 bu. an acre of oats; 2,500 lb. an acre of peanuts; 3½ tons an acre of alfalfa, 2 tons an acre of other hay; 700 lb. cotton lint an acre; 1,800 lb. tobacco an acre, it was pointed out.

Crop yields result from attention paid to fertilization and management, in addition to factors of soil, crop and climate. Dr. Fitts told his North Carolina audience that one of the important factors which can be easily improved is "adequate use of fertilizer and lime. The soil fertility level of most southeastern soils is notoriously low . . . too low in many cases for the efficient production of crops."

But does that mean smaller use of fertilizer? Not at all! By heeding the suggestions of soil tests and following fertilizer and lime recommendations made on this basis, prosperity can be obtained by every farmer who has the foresight to go into the program whole-heartedly.

A negative note in the picture is observed in the possible decline in farm prices as predicted by some experts. The USDA's price index for recent months has been on a slight decline . . . not enough we hope to cause discouragement among farmers . . . while farm production costs held steady at a high level. How far this trend might go remains to be seen, of course, but it is regarded by many as a natural result of adjusting to a situation where record crop yields are made in the face of lower supports.

It must be remembered, however, that regardless of the situation, the most potent economic factor is that of lowering unit cost of production on the farm. It has been proved time after time that application of recommended amounts of fertilizer help the farmer to gain a profit whether times are good or not.

The fertilizer industry can be pretty well assured of results if this message gets across to the farmer.

Pesticide Prospects

During the cold winter months, insects are not a prime subject of conversation, but at the same time entomologists are looking ahead to the 1959 season for signs of possible activity in the pest world. What they see at this point will not make or break a successful pesticide season, but it seems worth mentioning that entomologists in Illinois believe that European corn borer populations in that state may be greater than they were in 1958. H. B. Petty, extension entomologist with the University of Illinois told a group of canners recently that the first-generation corn borer was more numerous in much of the state. Entomologists in other corn belt states have also indicated that corn borers may be more of a problem in 1959 than was the case last year.

Grasshoppers, boll weevils, bollworms, and soil-infesting pests are all potentially numerous, along with a great assortment of other miscellaneous insects which will have to be controlled in the coming season.

Having appropriate insecticides on hand at the right place and the right time may be the key to stepped up sales for 1959. Meanwhile, the pesticide industry prepares for whatever might lie ahead hoping, as always, that its educated guesses will be reasonably accurate as to the amounts needed in the overall picture as well as the quantity required by individual firms to fill their own obligations.

Probably no other industry faces so many ifs in planning a year's production. Important factors such as weather, the abundance of insects, the value of crops, the mood of the farmer and acts of Congress are all beyond control of the pesticide maker. Yet he looks ahead saying, "This will be a good year." And the chances are it will be.

Croplife's Home Office

Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG
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DONALD NETH
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WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

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MEETING MEMOS

Feb. 2-4 — Association of Southern Agricultural Workers, 56th annual meeting, Claridge Hotel, Memphis, Tenn.

Feb. 3-4—Second Annual New Mexico Agricultural Chemicals Conference, Milton Hall, New Mexico State University Campus, Las Cruces, N.M.; Dr. J. Gordon Watts, chairman of NMSU botany and entomology department, in charge.

Feb. 16-17 — Montana State Fertilizer Dealer School, Great Falls, Mont., Civic Center.

March 19-20—Oregon Feed and Seed Dealers Assn., annual convention, Multnomah Hotel, Portland, Ore.

Feb. 24—Western Washington Fertilizer Dealers Meeting, N. W. Washington Experiment Station, Mt. Vernon, Wash.

July 7-9—Regional Fertilizer Conference, co-sponsored by the Pacific Northwest Plant Food Assn. and state colleges and universities in the area, Winthrop Hotel, Tacoma, Wash.

Nov. 16-20 — National Aviation Trades Assn., 20th annual convention, New Orleans, La.

Meeting Memos listed above are being listed in this department this week for the first time.

Jan. 27-28 — Insecticide - Fungicide Conference, Kellogg Center, Michigan State University, East Lansing, Mich.

Jan. 27-28—Nematology Workshop, Portland, Ore., sponsored by Shell Chemical Corp.

Jan. 27-28—Soil Science Society of North Carolina, Williams Hall, North Carolina State College, Raleigh.

Jan. 28-29 — Illinois Custom Spray Operators' Training School, 11th annual meeting, University of Illinois, Urbana.

Jan. 29—South Dakota Fertilizer Dealer Short Course, South Dakota State College, Brookings, S.D.

Jan. 29-30—Colorado Agricultural Chemicals Assn., Cosmopolitan Hotel, Denver. D. E. Garrison, Box 623, Greeley, Colo., secretary.

Feb. 4—Fertilizer Salesmen's Training School, National Plant Food Institute, Columbus, Ohio.

Feb. 9-10—National Cotton Council, 21st annual meeting, Dinkler Plaza Hotel, Atlanta, Ga.

Feb. 10-12 — Agricultural Chemicals Conference, sixth annual meeting, Texas Technological College, Lubbock, Texas.

Feb. 12-13—Midwestern Agronomists-Fertilizer Industry Representatives, 11th annual meeting, Edgewater Beach Hotel, Chicago, Ill., sponsored by National Plant Food Institute.

Feb. 13—National Safety Council, executive committee of the fertilizer section, winter meeting, Heart of Atlanta Motel, Atlanta, Ga.

Feb. 13-18 — Maryland Agricultural Pesticides Conferences; at Salisbury State Teachers College Feb. 13, La Plata Feb. 16, and Frederick Feb. 18.

Feb. 18-20—Midwestern Chapter of the National Shade Tree Conference, 14th annual meeting, LaSalle Hotel, Chicago, Noel B. Wysong, secretary.

Feb. 24-25—Alabama Pest Control Conference, Alabama Polytechnic Institute, W. G. Eden, Secretary-Treasurer, Alabama Association for Control of Economic Pests, Alabama Polytechnic Institute, Auburn, Ala.

March 4-5—Annual Weed and Insect Conference, Fonner Park, Grand Island, Neb.

March 17—Western Agricultural Chemicals Assn. spring meeting, Hotel Miramar, Santa Barbara, Cal. C. O. Barnard, executive secretary.

June 9-10—Seventeenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Velda Rose Motel, Hot Springs, Ark.; Maurice Rowe, Virginia Department of Agriculture, 1122 State Office Bldg., Richmond 19, Va.

June 14-17—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

July 7-9 — Pacific Northwest Plant Food Assn., 10th Annual Regional Fertilizer Conerence, Tacoma, Wash.

Nov. 4-6—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C. Dr. Vincent Sauchelli, National Plant Food Institute, chairman.

GRASSHOPPER BOARD

SANTA FE, N.M.—Appointed to New Mexico's Grasshopper Control Board by incoming Gov. John Burroughs are: Dallas Rierson, head of the state department of agriculture, Las Cruces; H. C. Gilliland, Clayton rancher, and W. W. Benton, rancher, who is a vice president of the New Mexico Cattle Growers Assn. The board was established by the 1957 New Mexico legislature to mobilize state resources to reduce grasshopper infestations.

CALENDAR FOR 1959-60

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Nineteen Applications Win Insect Battle For Arkansas Farmer

SHERRILL, ARK. — The insects were bad in the Arkansas River bottomlands, but C. H. Turk didn't lose much cotton to them. On his 320-acre field he poisoned 19 times, which may be some sort of record.

"Farmers have been paying rent to boll weevils and boll worms for as long as I can remember," he said. "I decided to make a fight of it. The weevils may have got some of the cotton, but not much."

Mr. Turk also went all out on fertilizer. He put down 90 lb. of nitrogen and 350 lb. of 6-24-24 per acre. The fertilizer cost slightly over $22 an acre, but it seemed to have paid off, for he made over two bales per acre on his 320 acres. This compares with slightly over a bale for the community average.

"The old plantation style of farming is passing on," he explained. "We're streamlining operations, using more machinery, and farm chemicals, and doing a better job of managing. I don't know how much fertilizer is enough, but it's doubtful if I have reached the maximum yet."

Two Appointed to Staff Of Mississippi State

STATE COLLEGE, MISS. — Two appointments to the staff of the Agricultural Experiment Station at Mississippi State University were announced recently by Dr. Clay Lyle, dean and director of the agricultural division of the university, and Henry H. Leveck, associate director of the experiment station.

Rupert C. Palmer has been appointed assistant plant pathologist, and Rollin C. Glenn, assistant agronomist and assistant professor of agronomy.

Mr. Palmer, a specialist in chemical weed control, received his B.S. in '52 and his M.S. in '54 and is now a candidate for the Ph.D. at Louisiana State University.

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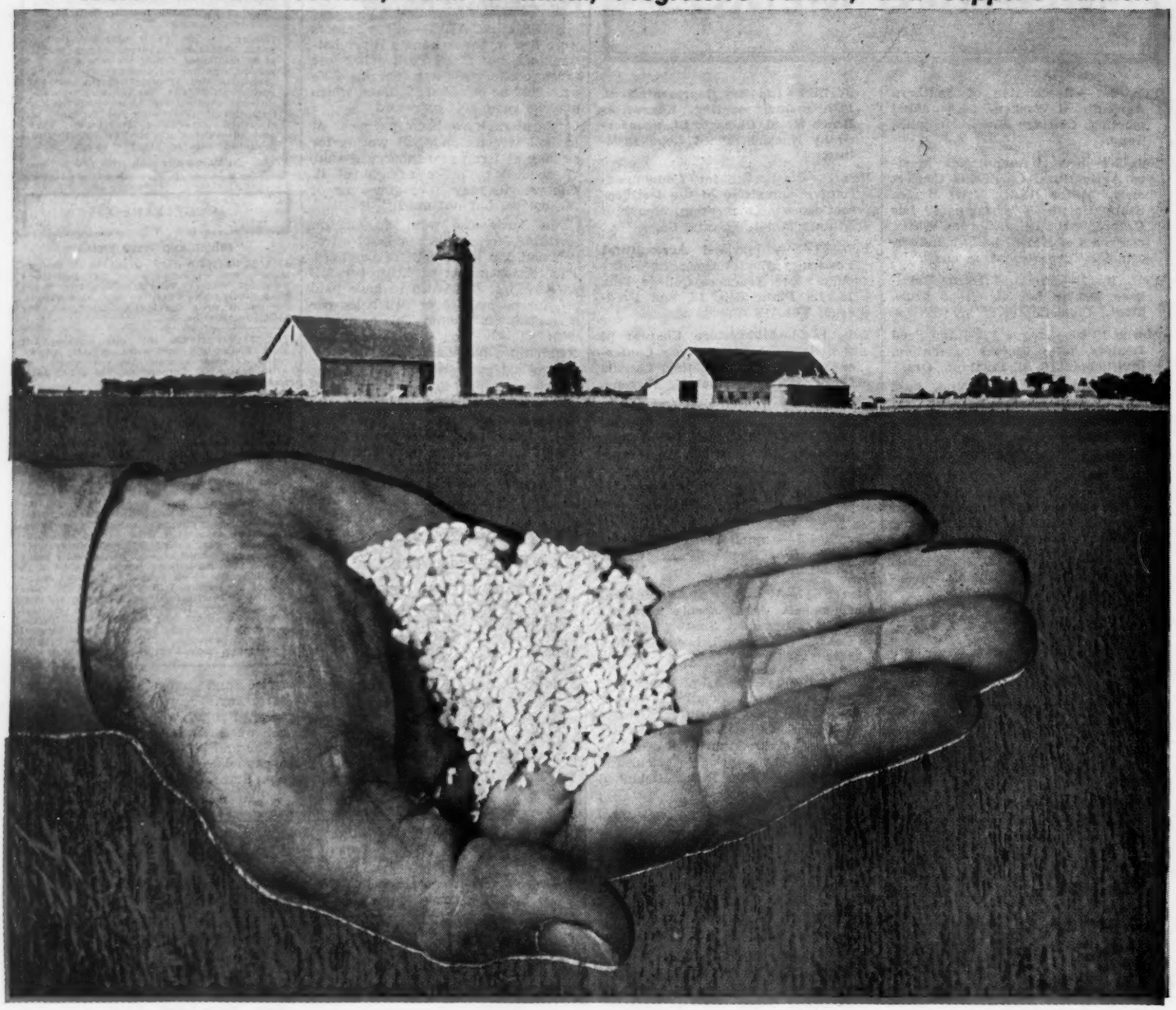

Hi-D®...the only ammonium nitrate that's granular!

the helping hand that boosts your yield

Give your land the helping hand of Hi-D. See for yourself why Hi-D is better than any other ammonium nitrate.

Hi-D handles so well—in storage and in spreading. *Only Hi-D is granular.* High in density, Hi-D is super dry—has less tendency to pick up moisture prior to application even under humid field conditions. Result: Hi-D always flows freely—doesn't gum-up—won't clog, cake or bridge in the spreader. And still another advantage, you can get up to 20% more ammonium nitrate in the hopper to reduce loading stops.

Hi-D contains 33.5% of available nitrogen. This crop-boosting nitrogen comes in two equal "servings"—your crops get half *nitrate* nitrogen for vigorous early growth and half *ammonia* nitrogen for sustained follow-up feeding.

This year, let Hi-D help boost your yield. but remember—sound management calls first for soil testing, a liming program if needed, and the necessary balanced mixed fertilizer. Then, a supplementary feeding of nitrogen—the heart of the harvest. Make it Hi-D ammonium nitrate . . . see your dealer.

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